FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 29—Number 4 | JANUARY 26, 1957 | 1 Year $4, 2 Years $7

Feed Price Hike Seen in Aid Plan

Program Details Announced for Midwest Meeting

KANSAS CITY—Program details have been announced for the annua convention of the Midwest Feed Manufacturers Assn. at Colorado Springs, Colo., Feb. 16-19. The opening phase of the convention will be a directors' meeting at noon on Feb. 16 and the program proper will begin on the following day.

About 600 are expected to attend the meeting and will be registered at the Broadmoor and Antlers Hotels. A limited number of hotel accommodations are still available, according to Lloyd S. Larson, executive vice president of the association.

"The Forward Look" is the conven-

(Continued on page 65)

Cornell Nutrition Conference Scheduled

ITHACA, N.Y. — Cornell University's 1957 Nutrition Conference for Feed Manufacturers will be held Oct. 31-Nov. 1 at the Statler Hotel, Buffalo. The conference, sponsored by the departments of animal husbandry, poultry husbandry and biochemistry and nutrition and the graduate school of nutrition of Cornell, is conducted in cooperation with the American Feed Manufacturers Assn.

Copies of the conference program and cards providing for preregistration and hotel reservations will be mailed in late August to persons who attended previous conferences. Persons not on the conference mailing list may obtain copies of this material by writing to Prof. J. K. Loosli, Stocking Hall, Cornell University, Ithaca, N.Y. Prof. Loosli is chairman of the 1957 meeting.

New Report Analyzes Price Prospects for Poultrymen

CHICAGO — Here's how a new poultry survey committee views the egg, broiler and turkey price outlook:

- Unless chickens raised this year for laying flock replacement are reduced 8%, egg prices next fall and winter are likely to be lower than those of a year earlier.
- Indications are that the turkey crop for 1957 may be 84 million birds, an increase of 10% over last year, according to growers' intentions on Jan. 1. If this number of birds moves to market, prices will probably be substantially lower than in 1956.
- The April-June period of 1957 may offer lower prices for broilers than was true in the same period of 1956. January-March prices may be slightly higher, up to 3 to 5¢ lb. over the December, 1956, level.

Those are the highlights of the first report in what is called a "brand new service for agriculture and industry—totally different outlook statements for broilers, turkeys and eggs." The report is designed for immediate application and widespread use by the poultry industry.

Industry-Sponsored

Establishment of the new service was spearheaded by the American Feed Manufacturers Assn., in cooperation with the American Poultry & Hatchery Federation, National Broiler Council, National Turkey Federation and the Poultry and Egg National Board.

The new report is the first of a series to be issued at least three, and possibly four, times a year by a newly formed group of college economists, called the Poultry Survey Committee.

Members include Dr. Wendell Earle, Cornell University; Dr. R. L. Kohls, Purdue University; Dr. C. K. Laurent, University of Georgia, and Dr. G. B. Wood, Oregon State College. It is planned that the committee will be expanded to include several other college men, but it will have a maximum of seven members.

Nine industry men and several from the U.S. Department of Agriculture are serving as advisors. This group includes, among others, Dean McNeal, Pillsbury Mills, Inc., Minneapolis; M. S. Newborg, Armour &

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AFMA Cites Likely Market Effect of Including Protein in Drouth Program

CHICAGO — The American Feed Manufacturers Assn. this week pointed out that the proposed inclusion of protein meals in the government's drouth feed program would have serious effects on the feed industry and its customers in all areas of the country.

If a sizeable tonnage of meal were to be obtained and moved into the drouth areas at reduced prices, there would be immediate effects on the free market price, the AFMA noted. Since protein meals are a basic ingredient, prices of feed for all types of livestock and poultry would rise, and producers of meat, milk and eggs in every part of the country could be faced with increased production costs.

Bills Introduced

The AFMA called attention to the problem in a special bulletin issued this week. Concern over the situation results from current efforts to have protein meals included in the emergency feed grain program which is in effect in 11 states. Proposals for inclusion of proteins in the program have been made in several bills which have been introduced in Congress and referred to the agriculture committees in the two chambers.

Everyone will agree that drouth feed help is "desperately" needed by many feeders and ranchers, the AFMA said, but efforts should be made to avoid the repercussions that inclusion of protein meals in the drouth program would have.

Feed manufacturers sharing this view were urged to contact their senators and congressmen and members of the House and Senate Agriculture committees and inform them of the entire situation.

Recommendation

The President's recent tour of the drouth area undoubtedly will result in additional aid of some kind, the AFMA said. The association bulletin recommended that the present program be continued, plus a liberalized long range credit arrangement.

"This would seem to be the best approach and would avoid the repercussions that will certainly result if protein meals are included in the program," AFMA said. "Although protein prices have strengthened recently, the price relationship with grains is still considered quite favorable. Feeders in the drouth areas who

(Continued on page 65)

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Proposed Bills Could Boost Meal $20, Experts Say

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Accustomed to doing things in a big way, the Texas congressional delegation has taken steps which lay the ground work for a substantial increase in the cost of vegetable protein meals to the feed industry and to the poultry, dairy and livestock industries of the nation.

The Texas lawmakers have introduced more than a score of bills in Congress which would provide a federal subsidy to cattlemen in the drouth area on purchases of vegetable protein cake for feeding.

These measures were timed to take advantage of the return of the President from his inspection tour of the drouth area.

Some persons in the trade believe that if the Texas bills are enacted,

(Continued on page 8)

FEEDSTUFFS *Features This Week*

PACKAGE EGG PROGRAM: One of the latest developments in the feed and poultry industries is a "package" egg program coordinated by a major feed company. Read about it on page 54.

OTHER FEATURES: An article on page 18 tells how a Utah feed firm's faith in a sound business policy has paid off. The "inequity" of present egg grading methods is discussed by an Ohio feed man on page 52.

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This issue includes a section giving special emphasis to the alfalfa dehydrating industry prior to the annual meeting of the American Dehydrators Assn. at the Edgewater Gulf Hotel, Edgewater Park, Miss., on Jan. 31-Feb. 2. Developments and research progress of interest to the feed manufacturer and to the producer, processor and seller of dehydrated alfalfa are reported in articles specially prepared by well-known authorities. The alfalfa section will be found on the pages following page 33.

Current Alfalfa Research	2a	Xanthophylls	20a
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Unknown Factors	14a	Alfalfa Aphid	32a
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Broiler Placement Increase Halts

SALISBURY, MD.—Broiler chick placements and egg settings took a rest last week from the trend of pushing upward each week. However, numbers continued ahead of a year ago.

Nationwide, chick placements in 22 states totaled 24,030,000 or practically unchanged from the previous week, but 16% above the same week a year ago. Increases in placements were reported in 12 of the 22 states.

Egg settings in the 22 states totaled 25,522,000 for the week ending Jan. 19. This was nearly the same as during the previous week but was

(Continued on page 65)

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Danger in Protein Subsidy

IT is difficult to believe that a majority in Congress would vote to subsidize vegetable protein meals as a drouth relief measure, when it is clear to everyone that the meals would have to be purchased in the open market. The inevitable result would be to increase the price of protein meals sharply, thus creating higher feeding costs for poultrymen, dairymen, hog producers, and cattlemen outside the drouth area.

In an attempt to give temporary help to a few—relatively speaking—the food production costs of the whole nation would be inflated. To keep drouth area cattlemen in business, other feeders would be subjected to substantial penalties. Regardless of the sympathy everyone feels for those struggling to keep going through the nation's longest and most severe drouth, it seems obvious that the equitable or practical solution is not contained in the proposals advanced by the Texas congressmen.

News stories elsewhere in this issue of Feedstuffs give details of the efforts being made to authorize the subsidies and of the stand taken by the American Feed Manufacturers Assn. in opposition. Feed companies individually and other feed organizations are asked to express their views to their congressmen. They should do so. Incomprehensible as it may seem to an informed observer that the proposals would be approved by a majority in the Congress, strange and unpredictable things happen in that body. There are a lot of things your senators and representatives don't know unless someone tells them, and this quite probably is one of them. Superficially, it may appear to a legislator that a subsidy for protein meals for drouth area cattlemen would be a direct, simple and practical way to give needed aid to a distressed segment of our population. It may also seem to be the kind of political maneuver that will build up some good-will against the time when it will be rewarded with votes. In view of these dangers, feed men and feeders should make certain that their own congressmen understand that the costs of such a subsidy would be so heavy both to the great majority of feeders and to food consumers as to be unwarranted.

★ ★ ★

SOME of the angles to the proposition for protein meal subsidies, as described by John Cipperly, Feedstuffs' Washington correspondent, emphasize the danger that the legislation could be approved unless the threat is realized and unless strong opposition is expressed to it.

In the first place, the political aspect is strong. The drouth area covers a wide territory, affecting at least parts of 15 states. The senators and representatives in these states conceivably will support the proposals—at least until they are made to realize the larger economic impact. The promise of "cheap feed" for their constituents is a temptation that few politicians would withstand.

In the second place, the drouth has been highly publicized. The effects of it were highlighted by the recent inspection trip of President Eisenhower, Secretary Benson and party to the stricken area. Probably there is no one, in or out of politics, who would not favor advancing any practical help to the farmers of the drouth territory. This feeling, and this dramatization of the situation, may gain considerable support for the subsidy proposals in Congress from non-drouth states, especially those on the fringes of the drouth area.

In the third place, there are congressmen with a built-in spending complex. They would vote a subsidy for anything, if they thought it had a popular following.

So, it is no time to say "it can't happen." It is no time to say "let the other fellow do it. I'm busy."

Mr. Cipperly says that one or more of the bills may very well be approved in subcommittee, although that would not mean, of course, that it would be accepted by the full agriculture committee. However, he says, "the Texan hoop-la plus the inflationary aspects of the budget plus the dramatized presidential tour of the drouth area may drag in fringe supporters for these measures, at least in the House, and this bill could go through the House like greased lightning."

He continues that "the more mature Senate can and probably will call a halt to the proposals, despite the fact that in the Senate the influential majority leader, Lyndon Johnson of Texas, has introduced a similar measure to those now pending before the House subcommittee."

★ ★ ★

AN observer experienced in the meal markets estimates that for every dollar the USDA would subsidize protein meal supplies to the drouth-area cattlemen, the open market price for vegetable protein meal all over the nation will rise in a compensatory way—meaning that feeders in the Northwest, in Minnesota, the Shenandoah, the eastern shore, Georgia, Maine and elsewhere in non-drouth territory will pay sharply higher prices for the vegetable protein component of their feed supplies. Some estimates are that there would be an immediate jump of $7 ton in leading protein meals if the bill were passed, and that there would be an additional substantial advance by late winter.

The American Feed Manufacturers Assn. has shown alert leadership in recognizing these threats and in organizing opposition to the proposals. Their efforts should be backed up by similar presentations to congressmen from the feed industry generally, and from feed industry customers.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Formula feed business was stimulated by colder weather and snow in many areas this week, and manufacturers were more optimistic about tonnage prospects. Concurrently, demand for hog feeds showed improvement in Corn Belt areas. Sales of laying concentrates were reported fairly steady in spite of poor egg returns. However, some areas reported early chick starter sales are lagging because of the unfavorable price situation. Millfeed prices eased off, but alfalfa meal remained firm and oilseed meals were steady to stronger. The index of wholesale feedstuffs prices gained .9 point to 85.5 and the feed grain index dropped .4 point to 76.9 in the week ending Jan. 23. (Ingredient details on pages 66-68.)

Northwest

Demand for formula feeds is fairly brisk in the Northwest, with manufacturers reporting sales and shipments equal to the level of the previous week or somewhat larger.

Further improvement in hog feed demand was helping to keep tonnage up, and stepped up shipments of turkey feeds for breeder flocks also was a factor in better business for some firms. Some growers already are taking shipments of turkey starter rations. A big volume in this line is anticipated this year.

After the temporary slowdown in dairy feed shipments last week at some mills, volume has come back up again. Beef cattle feeds are moving out at a steady pace.

With backlogs building up somewhat, manufacturers are fairly optimistic about the outlook for February business. Production schedules remained at one and one-half to two shifts plus some overtime at larger plants.

Southwest

Feed business in the Southwest seems to be spotty this week, with some mixers reporting a pickup from a week ago, others noting a letdown, and still others saying it is about the same.

Cattle feed sales have been stimulated by winter weather over the area, but the same winter weather has slowed down highway transportation so that dock business at some mills has been cut because of the inability of trucks to move with ease in the heavy snow.

Formula hog feed is meeting with more demand. Better hog prices have caused more growers to hold back breeding stock with the result that there are more hogs on farms now to consume feed.

There has been a little pickup in the egg feed business, despite low egg prices. And the broiler market has shown some firmness again to cause a small increase in interest there. One manufacturer reported a strong recent trend toward the use of concentrates in the broiler-growing areas instead of a complete feed.

Running time ranges from five days of three shifts to five days of one shift. Most mills are running a normal week, but some mills say they are having difficulty keeping up that pace. Order backlogs for next week are expected to vary from hardly any to three days. Prices are steady to higher, with hog feeds anticipated to be up 50¢@$1 on the strength in animal protein. Some mixers expect to put prices up 40@80¢ across the board on a higher oilseed meal market, said to be due to demand that these ingredients be included by the government in the emergency drouth feed programs.

Little change in the level of formulated feed business in Texas is reported this week. Mills continue to experience pretty good sales, with the different types of feed moving at about the same pace as in the last several weeks. Cattle, broiler and growing feeds are selling well. Factors affecting the market are said to be scarce although mills are exhibiting considerable concern over the efforts to have oilseed meals included in the drouth feed program. Feed prices are steady. Running time for most mills continues to be at about 5 to 5½ days of two shifts.

Northeast

Dairy feeds, under the impetus of cold weather, have overtaken egg mashes as tonnage sales leaders. Formula feed sales in general were steady with the preceding week.

Broiler prices improved a little, but one spokesman said that at the rate growers are putting replacements in, the improvement is not likely to last. He added that the impact of the new replacements will be felt in the market in about 10 weeks.

Recently there has been some talk that broiler growers might get together to gear production to seasonal needs, but a spokesman said that before any stabilization of output can be accomplished the problem of vertical production must be solved.

Egg prices held about steady during the week.

Running time of formula feed manufacturers averaged 40 hours last week.

Central States

Feed manufacturers in the central states expressed general satisfaction with the rate of sales during the week ending Jan. 23, even though the tempo shows some decrease from the preceding period.

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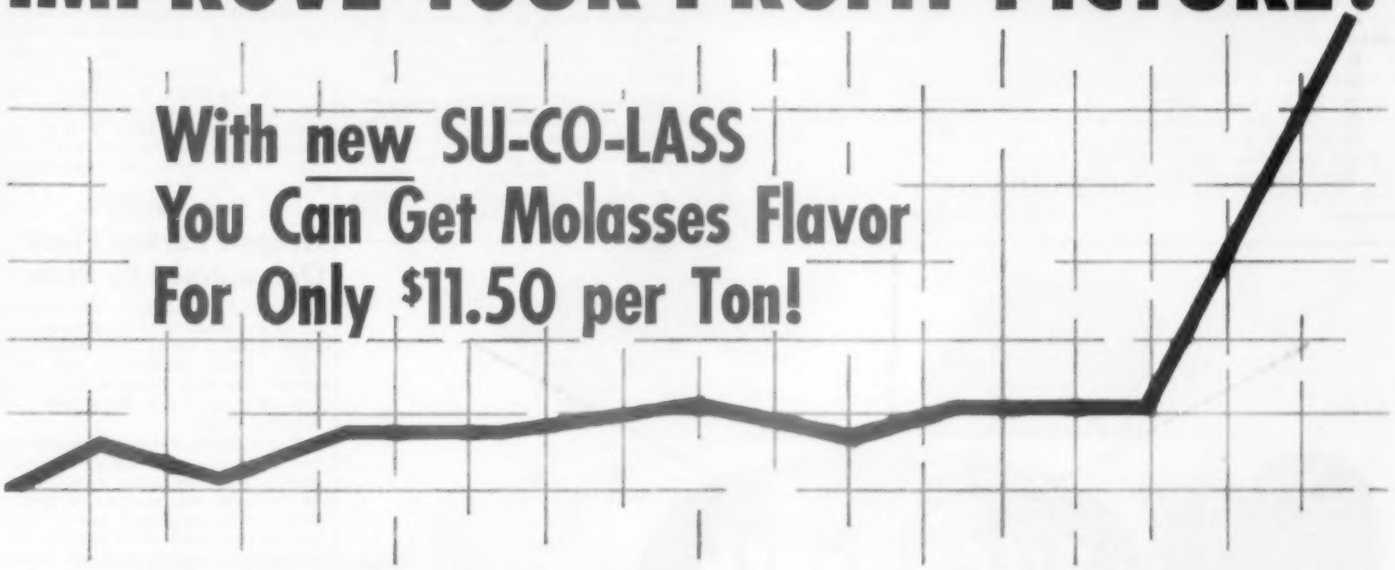

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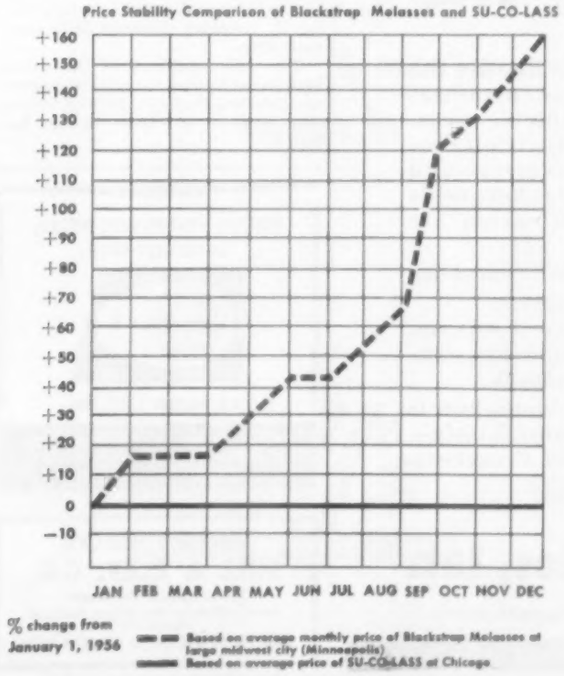

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New Sales Opportunities in Spotlight at Indiana Meeting

By DON E. ROGERS
Feedstuffs Editorial Staff

INDIANAPOLIS—Capable speakers on such subjects as the growing use of fertilizers, proposed changes in wheat grades, the functions and uses of the grain futures market, the new look in the formula feed industry and Washington problems facing the grain trade, brought about an interesting and fast-moving 55th annual convention of the Indiana Grain & Feed Dealers Assn. at the Claypool Hotel Jan. 20-21. Attendance hit the 600 mark.

Avon Burk, Burk Elevator Co., Decatur, Ind., was elected president for the ensuing year, succeeding E. D. Scott, O. L. Barr Grain Co., Bicknell. Ralph H. Snyder, Snyder Elevator, Taylorsville, was chosen vice president.

New directors elected were: Mr. Scott; Walter Mosbaugh, ABC Grain Corp., Arcadia; R. T. Creekmore, Acme-Goodrich, Inc., Indianapolis; and H. E. Barnett, Barnett Grain Co., Morocco.

"Fertilizer Uses of the Future" was the subject of a panel composed of representatives of Allied Chemical & Dye Corp., Nitrogen Division, under the direction of Walter S. Colvin of the New York headquarters.

The panel members predicted an important expansion in the use of fertilizer in Indiana in the next 10 years and pointed out that the grain and feed dealer will become an important cog in this development. The fertilizer industry is in a state of revolution and, while usage has expanded rapidly since World War II, the industry just now is getting into second gear. The fertilizer industry was likened to the feed industry which has made such notable scientific development in the past decade. Far better fertilizer products are being made now than at the close of the war and the outlook is for a continuation of this progress.

Higher Retail Sales

It was predicted that use of fertilizer in Indiana by 1967 would be two million tons, as compared with 1.2 million tons in 1956. More acreage will come under fertilization and more tons per acre will be used, it was predicted. This indicates more bushels of grain to be produced and marketed through the country grain elevators and more purchasing power for the products of the feed stores.

Grain elevator operators and feed dealers should become a part of the fertilizer expansion for several reasons, Glen Reese, Hamlett, Ind., one of the panel members, said. First, they will want to make money and

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Continental Grain Co. Elevator at Chicago Destroyed

CHICAGO — Fire virtually destroyed the Continental Grain Co.'s 2½ million bushel elevator B here the night of Jan. 21. Damages, consisting of almost total loss of the B elevator and its contents and water losses to elevator A nearby, are estimated at between $5 and $6 million.

Continental has assured the grain trade it will be able to fulfill all its domestic and export commitments from several other elevators. Cause of the fire was not readily ascertainable, but a newspaper report quoted a night watchman as saying it originated in the roof of the 135-foot elevator. Shortly after 9 p.m. the automatic alarm sounded and a few minutes later flames were seen shooting from the roof.

Oregon Turkey Flock Quarantined by State

PORTLAND, ORE. — The Oregon State Department of Agriculture reports it has a turkey flock on Sauvies Island under quarantine for ornithosis. The flock includes 3,400 hens and toms that are being held for breeding stock.

The flock has been under antibiotic treatment since the disease was suspected. The quarantine was imposed on the birds and premises on Jan. 2. Tetracycline compounds are the basis for the treatment. They are the only satisfactory control measures known at this time, officials said.

The quarantined flock is at the Triple B Turkey Farm, which is located adjacent to a farm on which ornithosis was first discovered in Oregon last March. At that time, two outbreaks were reported. The quarantine on the present flock is the first since that time.

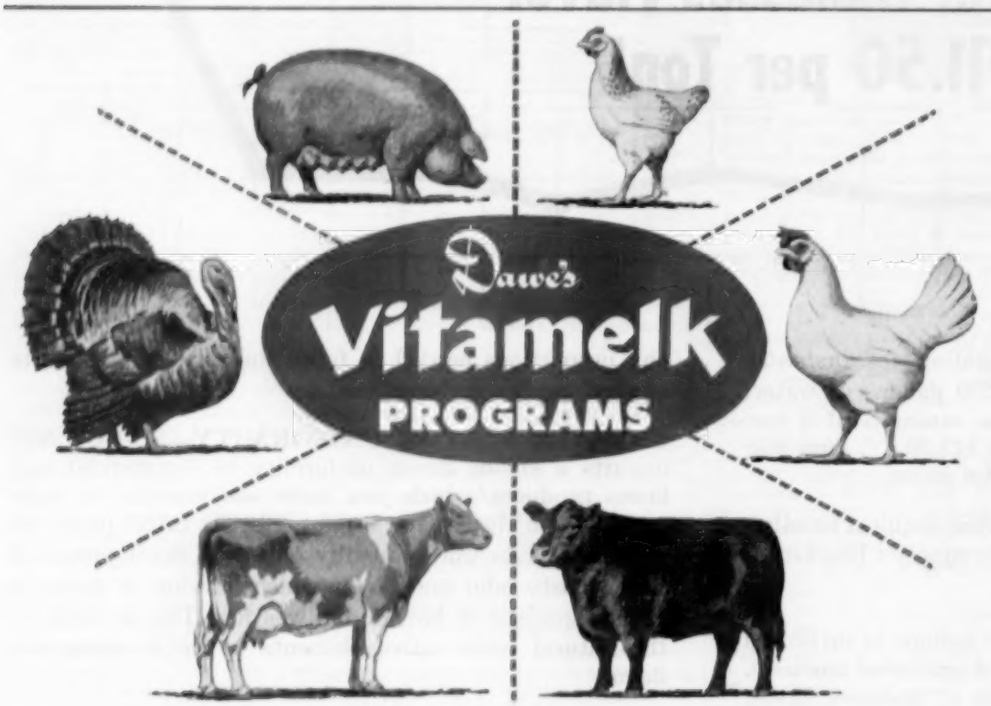
L. D. Compton to Head Kansas City Feed Club

KANSAS CITY — L. D. Compton, Commander-Larabee Milling Co., was elected president of the Kansas City Feed Club at the annual meeting in the Continental Hotel, here Jan. 23. Mr. Compton was treasurer of the organization during the past year.

As vice president, the club elected John C. Scherer, Carey Salt Co., who will also act as chairman of the entertainment committee in the coming year.

Wayne P. Anderson, Norris Grain Co., was elected secretary, and Phillip H. Knowles, General Mills, Inc., treasurer.

Two new members of the executive committee of the club were chosen: Bernard Buchner, Rodney Milling Co., and L. E. Cox, Bemis Bro. Bag Co.



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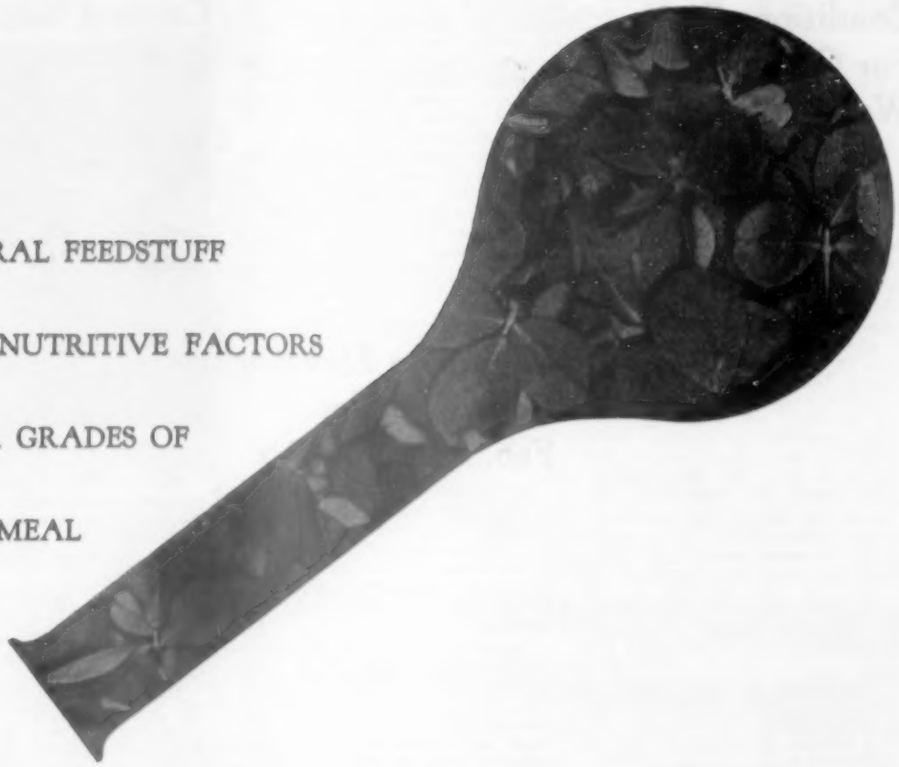

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Conditions Poor For Grazing in Western States

Most of the winter grazing areas in Montana, North and South Dakota were open for grazing during the past few weeks, with short feed available in eastern Montana, southwestern North Dakota and parts of South Dakota, according to U.S. Department of Agriculture reports.

Moisture improved grazing in Nebraska where the Sandhill's have fairly good feed. Wyoming has some short range feed with supplemental feeding. Eastern Colorado and western Kansas have very short feed, with pastures and ranges open and heavy supplemental feeding. Oklahoma has very short pasture feed and short hay and feed supplies, making heavy use of imported feeds.

Texas has passed nine consecutive months where range feed is reported at or near record low levels. Rains gave some soil moisture to improve small grain pastures in east Texas, but the western half of the state has bare ranges and pastures with heavy feeding to maintain livestock.

New Mexico has poor range feed with short water supplies and supplemental feeding of livestock, but early January rains covered western sections. In Idaho, Oregon and Washington lower ranges, pastures and fields have supplied good feed. Range feed conditions are good in northern Nevada and northern Utah with short, poor feed in the southern sections of both states. Arizona ranges have little feed with heavy supplemental feeding of cattle, but early January rains gave promise of some relief.

In California, drouth, wind and frosty nights deteriorated range and pasture feed to the worst condition in many years. The condition of range feed was at the lowest level in 35 years of record for Jan. 1 in Texas and Arizona.

In Colorado, New Mexico and Utah, the range feed condition is the lowest for Jan. 1 since 1935. In Kansas and Nebraska, the Jan. 1 range feed condition is the lowest for that date since 1938. California is the lowest for January since 1930. Heavy supplemental feeding for livestock has exhausted the local supplies of hay, feeds and roughage, with rather large imports of hay and feeds into the many dry sections.

The mild, open weather during December was favorable for cattle and calves in the northern sections and the drouth areas. Heavy supplemental feeding continued to hold cattle in fair condition in the dry areas. Generally, the condition of cattle was maintained with less than usual shrink.

Harold C. Pryor

SALES — The Nopco Chemical Co. has announced the appointment of Harold C. Pryor as sales representative for the agricultural department. Mr. Pryor will work with district sales manager, Lou Dye in covering Arkansas, Louisiana, Mississippi and Tennessee, headquartering at Memphis. Mr. Pryor's background includes on-the-job experience in nutrition, broiler production, agricultural sales and a degree in poultry and animal husbandry from the University of Arkansas. Mr. Pryor was formerly with Van Waters & Rogers, Inc., Dallas, selling Nopco products, among others, to feed mills in Texas, Oklahoma and Arkansas.

Minnesota Elevator Course Set for Feb. 25-March 15

MINNEAPOLIS—A grain elevator management short course has been scheduled Feb. 25-March 15 on the St. Paul campus of the University of Minnesota, it was announced by Dr. J. O. Christianson, director of agricultural short courses for the university.

Among the topics to be covered are formation, mixing and merchandising of feed, grain storage and drying, credit, insurance, bookkeeping, inventory control, scales, public relations and personnel, seeds, grain handling, letter writing, soil testing, warehouse laws and fire prevention.

Among the instructors will be George Greenleaf, director, elevator management course, Michigan State University; Dr. W. P. Martin, head, soils department, University of Minnesota; Prof. A. J. Schwantes, head, department of agricultural engineering, University of Minnesota; Dr. A. W. Donahoo, Minneapolis Grain Exchange; A. E. Oliver, Grain & Feed Dealers National Assn., and Fred Currier, Sr., Farmers Union Grain Terminal.

Class hours are scheduled for 8:30 a.m. to 4:20 p.m. Mondays through Fridays.

California Welcomes Crop-Saving Rains

SAN FRANCISCO — The rains came to California just in time to save the state's grain and other crop growers from serious economic disaster, crop observers report.

Storms which brought between two and three inches of precipitation in various areas broke what is probably the longest winter time drouth on record in the state. Ordinarily rains are very heavy during December and January, but no rain at all fell during December, 1956.

According to weather forecasters, if the rainfall is normal for the remainder of the winter season, California farm lands will be supplied with at least 80% of their normal water throughout the ordinarily dry spring and summer. Grain crops which had been seared will be saved for the year.

"The drouth was rapidly approaching the critical stage," W. C. Jacobsen, state director of agriculture, said, "and the rains came just in time."

California Nutrition Meeting Scheduled

MODESTO, CAL.—The Upper San Joaquin Valley district, California Hay, Grain & Feed Dealers Assn., will have a dairy meeting at the Hotel Covell, Modesto, Cal., at 7 p.m. on Feb. 7.

C. L. Pelissier, extension dairyman, will speak on dairy nutrition and management and a special film will be shown on nutrition. The district chairman, Henry Kamps, Berry Seed & Feed Co., Keyes, Cal., will be in charge.

Coronet Begins Texas City Production

Dicalcium Phosphate Plant at Texas City, Texas

TEXAS CITY, TEXAS—Dicalcium phosphate will begin moving from Texas City on a continuing basis in early February, according to R. S. Rydell, president of Coronet Phosphate Co.

Coronet dicalcium phosphate, called "DIKAL," is being produced by Texas City Chemicals, Inc., under the management of the Coronet company.

The plant is now in full operation, Mr. Rydell said. The initial volume of production, he said, will continue to be increased throughout 1957.

"It is the desire of the new management to bring Coronet's established reputation for providing quality feed phosphorus supplements to the Texas City operation," Mr. Rydell said.

Coronet is a division of Smith-Douglass Co., Inc., with home offices in Norfolk, Va.

In early October, Smith-Douglass announced that the U.S. District Court for the southern district of Texas had agreed to entertain a reorganization of the Texas City firm, based on a plan submitted by Smith-Douglass.

Texas City Chemicals, Inc., completed a large dicalcium phosphate plant at Texas City in 1953, with facilities for producing sulphuric acid, phosphoric acid and dicalcium phosphate. The company encountered financial difficulties shortly after the plant was completed, and operations were suspended in January, 1956.

"DIKAL" will be sold by the Coronet sales organization, headed by Henry Highton, sales manager. Mr. Highton said that the Texas City production offers "distribution advantages and faster service to feed manufacturers in the Southwest, Midwest and on the West Coast."

Cattle on Feed Increase 4%; Corn Belt States Show Gain

WASHINGTON — The number of cattle and calves on feed for market in the U.S. on Jan. 1 was 4% larger than a year earlier, according to the U.S. Department of Agriculture. Increases in certain Corn Belt states were largely responsible for the rise.

Total numbers on feed were estimated at 6,099,000 on the first of the year, compared with 5,880,000 on Jan. 1 last year.

There were variations among states in the different regions, but the net change in the north central states as a whole was a 5% increase from a year earlier. The 13 western states as a whole showed practically no change. (See the accompanying table for state and regional figures.)

Cattle and calves on feed in the Corn Belt numbered 4,425,000 on Jan. 1 this year, compared with 4,216,000 a year ago. Feeding in the western Corn Belt states was up 4% and in the eastern Corn Belt 6%. Feeding in Iowa, the nation's leading state, was up 9% from a year ago, while Illinois, the second ranking state, showed an 8% increase.

Inshipments Up

Shipments of stocker and feeder cattle into nine Corn Belt states for which data are available during the October-December period were up 7% from a year earlier. Shipments during the July-December period were up 23%.

California, the leading feeding state in the West, showed a 1% increase in the number of cattle and calves on feed. Colorado, second leading western state, was up 5%.

Some of the states in both regions which have been badly hurt by drouth showed decreases.

In the 13 states for which quarterly estimates of cattle on feed are made, the number on feed Jan. 1 was 5% more than a year earlier. On Oct. 1, 1956, the number was 3% more than a year earlier. The relatively higher level of feeding on Jan. 1 this year was the result of an increase in placements and fewer marketings during the past quarter.

(Continued on page 70)

Cattle and Calves on Feed Jan. 1, 1957, and Comparisons*

State	Oct. 1, 1956†	Jan. 1, 1956	Jan. 1, 1957	1957 as % of 1956
	1,000 head			%
Pennsylvania	...	82	90	110
Ohio	94	180	200	111
Indiana	167	321	321	100
Illinois	392	639	690	108
Michigan	...	116	124	107
Wisconsin	...	108	113	105
E. N. C.	...	1,364	1,448	106
Minnesota	196	337	371	110
Iowa	844	1,188	1,295	109
Missouri	197	281	281	100
N. Dakota	...	110	98	89
S. Dakota	96	210	210	100
Nebraska	402	544	560	103
Kansas	225	182	162	89
W. N. C.	...	2,852	2,977	104
N. C.	...	4,216	4,425	105
Oklahoma	...	66	60	91
Texas	131	148	143	97
Montana	...	62	68	110
Idaho	...	150	121	81
Wyoming	...	28	31	111
Colorado	194	235	246	105
N. Mexico	...	41	37	90
Arizona	150	204	222	109
Utah	...	54	55	102
Nevada	...	24	24	100
Washington	...	43	47	109
Oregon	...	38	34	90
California	519	489	496	101
Western	...	1,582	1,584	100
U. S.	...	5,880	6,099	104
9 states‡	2,613	3,882	4,090	105
13 states¶	3,607	4,958	5,197	105

*Estimates include only cattle being fattened for market as a more or less distinct agricultural enterprise, and exclude small operations incidental to dairy and general farming. Cattle thus fed are presumed to produce carcasses that will grade good or better. In addition there have been a number of cattle finished on distillery slop, citrus pulp and other by-product feeds in states not shown as well as cattle and calves being winter fed in West Virginia, Virginia, Kentucky and some other states to be marketed as grass fat in late summer.

†Dots (...) denote that data are not available and should not be assumed to mean zero.

‡Includes Ohio, Indiana, Illinois, Minnesota, Iowa, Missouri, South Dakota, Nebraska and Kansas.

¶Includes above 9 states and Texas, Colorado, Arizona and California.

36 Poultry Experts, Producers to Speak During S.E. Meeting

ATLANTA — The latest research and management information for broiler growers of the Southeast will be presented at a special "producer day" program during the tenth annual Southeastern Poultry & Egg Assn. convention-exposition at the Municipal Auditorium here Jan. 30.

Thirty-six poultry experts and producers from 17 states will appear on the program during the event Jan. 28-30.

The program Jan. 29 will present information on protecting quality in and merchandising of eggs. Dr. L. B. Darrah, marketing professor at Cornell University, Ithaca, N.Y., will discuss egg merchandising. He has conducted extensive tests in grocery stores relative to building egg sales. Other topics on Jan. 29 will include management training, poultry trends, hormones and prospects for 1957. An all-day turkey session will run simultaneously with the general program Jan. 29.

A Michigan State University pathologist who spent a year on the University of Georgia staff will open the "producer day" program Jan. 30. He is Dr. Samuel C. Schmittle, who will discuss recent developments in the control and treatment of chronic respiratory disease (CRD).

A University of Georgia graduate who now is a broiler grower and feed dealer in Habersham County, Robert Burch, will take up the advantages and disadvantages of bulk feeding. Another speaker will review the effects of labor saving equipment on the poultry industry and suggest ways to avoid management pitfalls in automation.

Developments in poultry health will be discussed by a panel of leading pathologists. Dr. Erwin Jungherr, University of Connecticut, department of animal diseases, Storrs, will moderate the discussion.

Dr. Fred R. Beaudette, Poultry Expert, Dies

NEW BRUNSWICK, N.J. — Dr. Fred R. Beaudette, chairman of the department of animal pathology at Rutgers University, died recently at New York. He was 59.

The Kansas-born scientist, a member of the New Jersey State University experiment station staff since 1923, won world-wide acclaim for several accomplishments. Among these were the development of vaccines to protect poultry from Newcastle disease and laryngotracheitis. He won a number of U.S. and foreign awards for his work, including the $1,000 Borden award in 1944 and New Jersey's Golden Egg award and a $1,500 purse in 1949.

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E. H. Gentsch

ADVANCES—E. H. (Jerry) Gentsch has been advanced to the newly-created position of field sales manager for the feed supplements department of the Borden Co.'s special products division. Mr. Gentsch, a 15-year veteran in the Borden sales organization, will direct all field sales activities under the supervision of Walter H. Kenlan, director of sales and marketing. Mr. Kenlan said that "The creation of this new position was necessitated by the company's expanding sales activities to the feed manufacturing industry and by its desire to provide closer, more personalized service to its customers."

Illinois Farm Supply Opens New Feed Mill in Springfield, Ill.

SPRINGFIELD, ILL.—The Illinois Farm Supply Co., Chicago, recently began operations at its new feed plant near Springfield.

F. E. Herndon, president, and other company officials and public officials were present for ribbon-cutting ceremonies opening the mill.

The new plant is now in production, but will not reach full output for several weeks, according to William Brooks, mill manager.

Mr. Brooks described the mill as one of the most automatic in the country. He said it is capable of producing 30 tons of feed an hour, and annual production capacity is said to be in excess of 100,000 tons.

The Springfield plant will supplement the company's existing feed manufacturing facilities at Mendota and Benton, Ill.

The Springfield facilities include the mill, a warehouse, administration building, garage and employee change house.

Company officials on hand for the opening included Mr. Herndon; Mr. Brooks; C. H. Becker, general manager; E. V. Stevenson, assistant manager; E. C. Davis, manufacturing director, and William Cole, manager of the feed division.

Illinois State Department of Agriculture and local officials were among others present.

Congress Studies Bills Making Poultry Inspection Compulsory

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—After the failure of the last session of the 84th Congress to agree on a bill to compel mandatory inspection of poultry, the poultry industry has closed ranks and is voluntarily backing legislation to require federal inspection of poultry moving in interstate commerce or to designated market areas under the supervision of the U.S. Department of Agriculture.

There have been a number of measures introduced in the House and several senators from poultry-producing states have joined in sponsoring a bill, S.313.

The House bill which seems to reflect the consensus of ideas on the subject by a considerable segment of the poultry industry is HR 767, introduced by Rep. Clifford McIntire (R., Maine).

This measure and the Senate bill, carrying the sponsorship of Sen. John J. Williams (R., Del.), are said to have been pattterned after the testimony developed at the last session of Congress. Advocates in USDA and the trade hope that examination of these bills will disclose this reflection of testimony at hearings in the Senate at the closing session of the 84th Congress and that Congress can dispense with, or abbreviate any further hearings and act promptly to get compulsory inspection of poultry into effect. The McIntire bill would become effective Jan. 1, 1958, but it would not be totally operative until July 1, 1958,

(Continued on page 70)

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CORN OATS PELLETS (Corn-Oats)
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James M. Dunaway Elected Head of Arkansas Group

LITTLE ROCK, ARK.—James M. Dunaway, Thibault Milling Co., Little Rock, was elected president of the Arkansas Feed Manufacturers Assn. at the organization's annual meeting here Jan. 17. Mr. Dunaway served in various positions in the association for several years and last year was vice president.

Ted Darragh, Darragh Co., Little Rock, was chosen vice president, and Jay F. Hill, Cameron Feed Mills, Little Rock, was named secretary-treasurer.

As directors, the association members elected the following, in addition to the three officers named above: Henry Niemeyer, Niemeyer Grain Co., Little Rock; H. W. Davis, Horseshoe Mills, Pine Bluff; Ray Higgins, General Mills, Inc., Hot Springs; Haney Cochran, H. K. Cochran Co., Little Rock; Gail Brown, Jeff Brown & Co., Springdale.

Oscar Straube, chairman, American Feed Manufacturers Assn., was the principal speaker on the convention program and discussed the future outlook for the industry and national association activities. Otherwise the convention time was devoted to committee deliberations on various state association problems.

The association voted several awards for various educational activities. One was a gift of $500 to the University of Arkansas to complete work on the Colonel Barton Pavilion at Agri-Park on the Fayetteville campus, an outdoor location used for many meetings and activities of the agricultural school.

The association again made $400 available for travel expenses for judging teams of the agricultural college and renewed five scholarships of $200 each for various state colleges in Arkansas which are not part of the state university.

Minnesota Turkey Meeting Feb. 1-2

MINNEAPOLIS — Efficient feeding, diseases and the need for expanded diagnostic facilities will be among the topics for discussion at the Minnesota Turkey Growers Assn meeting Feb. 1-2 at the Hotel Leamington, Minneapolis.

Dr. Elton Johnson, head of the poultry husbandry department, University of Minnesota, will talk on efficient feeding practices during the morning program Feb. 1. Results of random sample tests in 1956 will be reported in the afternoon of Feb. 1.

A smorgasbord on the evening of Feb. 1 and a banquet on the evening of Feb. 2 are other highlights. Lloyd Peterson, Paynesville, Minn., turkey grower, will preside as president of the group. The election of officers is set for 9:15 a.m. Feb. 2.

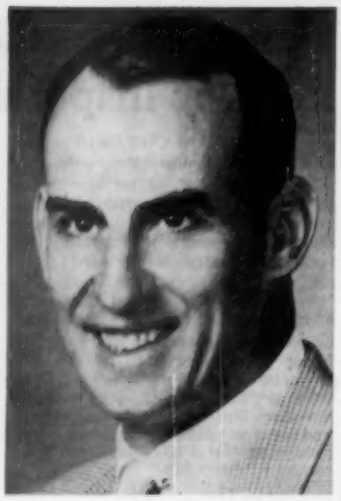
Oil Meal Futures Decline at Memphis

MEMPHIS — Protein oil meal futures were lower Jan. 23 than a week earlier on the Memphis Board of Trade.

Prices eased under profit-taking and hedging, after sharp advances had been made the previous week in soybean oil meal.

Selling late last week considered to be hedging found reduced prices in cottonseed oil meal. Those boards moved up early this week slightly, but not enough to better the close of Jan. 16.

Trading for the week included 23,400 tons of unrestricted oil meal, 1,500 tons of Eastern Trunk Line soybean oil meal, 5,200 tons of bulk solvent cottonseed oil meal, and no sacked old process cottonseed oil meal.



James V. Mayhall

MANAGER—James V. Mayhall has been named general manager of the newly organized feeds division of the McCabe Co., Minneapolis. Mr. Mayhall served the past five years as general manager of the Dover (Ohio) Milling Co. His previous five years were spent as vice president in charge of production and sales for Union National Mill, Springfield, Ohio. He is a 1946 graduate of Ohio State University, where he majored in industrial management. McCabe operates 62 elevators in Minnesota, North and South Dakota and Montana and is broadening its service to dealers and feeders in the four-state area.

MEAL PRICES

(Continued from page 1)

vegetable protein meal prices can climb by later winter to as much as $20 per ton over present levels.

Spokesmen for the Texas congressional group say that they are merely asking treatment for protein meals on about the same subsidy basis now in effect for the hay and roughage phase of the drouth aid program.

They contend that Texas cattlemen normally feed their animals on cottonseed cake and that under the present regulations of the U.S. Department of Agriculture, they are not being given any concession on this important part of their cattle operations.

In commenting on the similarity of this proposed new subsidy, they agreed that the hay program has not been highly effective since the $7.50 ton hay subsidy caused a run-up in the price of hay imported into the drouth area, which erased all advantage to their constituents.

They declined to see any parallel action if USDA were to grant a similar type of subsidy for cottonseed cake.

No Support at USDA

The proposed measures do not have any support at USDA. In fact, they have vigorous opposition since the goals of these measures would result in a severe hardship on other users of vegetable protein meals as the influence of the abnormal buying hits the available supply in the market.

Trade experts told this reporter this week that vegetable protein—up to this time stable price-wise—could jump as much as $20 by late winter if the proposed protein meal legislation is enacted.

Such a condition certainly would wipe out any advantage that the cattlemen might gain from a federal subsidy on protein supplies delivered to the drouth area.

Prior to official action by the Poague sub-committee of the House Agriculture Committee late this week, this reporter was told that the sub-committee was certain to report the protein subsidy measures favorably to the full House Agriculture Committee. Then, it was said, that under the House leadership of Sam Rayburn of Texas, the proposal would get a green light for debate and vote.

This aid proposal has great superficial appeal without deeper consideration of the impact on other industries, such as the broiler, turkey, dairy, poultry and swine industries. It also would affect adversely cattlemen outside the drouth area who would have to buy supplies at the predicted higher prices.

Available Supplies

An indication of the dynamite in the pending legislation is found in the Bureau of the Census report this week on stocks of protein meal in the hands of processing plants.

USDA does not own or control a single pound of these commodities. This means that if the new aid measures are enacted, USDA will have to add its buying power to the existing market situation.

After examining this week's census report on production of vegetable protein meals and stocks at processing plants, informed market observers told this reporter that the legislation could bring a substantial boost in protein meal prices—as noted above, possibly an increase of $20 ton by late winter.

The census report shows that processing plants have been using up all raw material stocks obtained and that meal stocks at mills are little more than a supply to meet immediate demand.

ACTION DEFERRED

WASHINGTON—The Poague subcommittee of the House Agriculture Committee deferred action Jan. 25 on the bills designed to include vegetable protein meals in the drouth emergency feed program. Committee action is now contemplated at an executive meeting of the committee on Jan. 29.

Testings Report Shows Potential for Turkey, Broiler Output Hikes

WASHINGTON—The potential for continued increases in broiler and turkey production is seen in a U.S. Department of Agriculture report on testings of breeding birds for pullorum disease.

The number of heavy white breed turkeys tested during December was 11% less than a year earlier, but the July-December total was up 8% from a year earlier. December testings totaled 138,416, while the July-December total was 473,305.

All of this July-December increase came early in the period, and in the recent months, there has been a decrease. Some persons have speculated that there might be a swing away from heavy whites, which can be marketed as lightweights, and back to light breed birds.

The number of heavy breed birds other than whites tested during December was 605,544—up 13% from a year earlier. For the July-December period, the total was 1,976,951, representing an increase of 29%.

The number of light breeds tested during December was 74,469—up 1% from a year earlier. The number tested in July-December was 4% above a year earlier.

In the 40 states for which comparisons are available, 2,158,607 chickens for supplying broiler hatching eggs were tested for pullorum during December. This represents an increase of 40%. For the July-December period, there was an increase of 33%.

The number of chickens for other purposes tested for pullorum disease during December was 17% larger than a year earlier. However, testings during the July-December period were down 3%.

CONGRATULATIONS—W. R. Flippin (center), Buckeye Cellulose Corp., elected 1957 president of the Memphis Board of Trade, is congratulated by retiring president Fred C. Lovitt (left), Fred Lovitt & Co., and Arthur A. Williams, executive vice president.

W. R. Flippin Named President of Memphis Board of Trade

MEMPHIS—W. R. Flippin, Buckeye Cellulose Corp., was unanimously elected president of the Memphis Board of Trade, succeeding Fred C. Lovitt, Fred Lovitt & Co.

D. J. Gillory, Gillory Sales Co., was elected vice president and Arthur A. Williams was renamed executive vice president.

Election results were announced during the 75th annual luncheon at the Hotel Peabody, attended by 250 guests.

Chosen on the board of directors were Lee Canterbury, Cargill, Inc.; H. Brent Cooke, Jr., Humphreys-Godwin Co.; Leroy Gaston, Marianna Sales Co.; Dixon Jordan, Standard Commission Co.; James W. Phelan, Mitchell, Hutchins & Co.; H. D. Tobias, Goldenrod Oil Meal Sales Co.; W. A. Wooten, First National Bank of Memphis, and Mr. Lovitt.

Mr. Williams, in his annual report, cited 1956 as one of the best years for the Memphis Board of Trade. Inspected grain receipts by the inspection department totaled to more than 40 million bushels, the largest volume for one year in history of the department.

Two reasons for the increase were noted. "First, the agricultural economy in the South is changing," said Mr. Williams, "and the acreage taken out of cotton is being planted in wheat, corn, oats, soybeans and other small grains.

"Secondly, the industrial development of President Island has attracted a number of large grain handlers and oilseed crushers to Memphis. These firms have recognized the many advantages Memphis offers as a grain accumulating and distributing center."

Two men who have been members of the Memphis Board of Trade for many years were honored. W. E. Richmond and L. B. Lovitt, father of the retiring president, were chosen lifetime honorary members.

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Lloyd N. Case Outlines Plan For New Concept of Supports

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—A two-year tour of duty with the U.S. Department of Agriculture has contributed to the building of a new and possibly unique outlook on price support programs for Lloyd N. Case who has resigned as head of the Commodity Stabilization Service to take an executive position with the Burdick Grain Co.

Mr. Case states his views on price support programs simply, feeling that his plan can be refined or adjusted within its simplicity to be made workable as long as price supports, at any level of parity, are part of the farm program.

Mr. Case's plan is to divide price supports for each farm, as far as grains are concerned, into two general categories: one category for food grains and the other for feed grains. He would fix price supports at any level necessary for each of these commodity classifications. For example, on a 600-acre farm which has been cultivated on the basis of half food and half feed grains, Mr. Case would apply the determined level of support for bread grains on that farm for all the acreage put into bread grains, subject to acreage allotments as required by law or as further adjusted by soil bank incentives.

For the feed grains on the farm, Mr. Case would adopt the Walter C. Berger theory of price support and sales of feed grains on the basis of total digestible nutrients. The price support level for feed grains would be related one to the other on the basis of feed value relationship. The feed grain half of the 600-acre farm would obtain price support for its feed grain cultivation, subject to such acreage allotment controls and soil bank requirements, at varying levels of support reflecting the Berger relationship concept.

However, the individual farmer could reject the entire Case plan or either part of it at his own discretion.

According to Mr. Case, this choice would give every farmer complete freedom of action between feed crops and other crops. He could plant his entire farm to barley, oats, corn or wheat, but he would be required to stay within existing acreage allotment or soil bank controls to be eligible for price support or soil bank payments.

Mr. Case concludes that there must first be a broad division of the price support concept between bread and feed grains. All feed grains, he feels, must be cast into a common mold to develop an effective program of control which would not favor one crop over another. He notes that the present corn price support program, with its loose acreage allotment plan, has had the effect of encouraging the development of increased acreage of grain sorghums which now threaten to become an important competitor with corn in the feed industry.

Lloyd N. Case

Mr. Case emphasizes that his plan would not freeze the individual farm to any historical pattern. When it's financially attractive, he said,

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NATIONAL BENTONITE . . . Promotes Better Sales Appeal . . . adds appealing gloss to pellet surface.

NATIONAL BENTONITE . . . Provides Greater Pellet Firmness . . . and strength—prevents product crumbling, yet produces pellets easily eaten by livestock. Makes it easy to use many hard-to-pellet ingredients such as milo grain and some types of cottonseed meal

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The feeds that promote quicker growth and greater meat and egg yield are the feeds your dealers and their customers want to buy:

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Mix either Produlac or Nadrisol in your formula feeds. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

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PRODUCTS CORPORATION
GRAIN PRODUCTS DIVISION
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the individual farmer could plant his land all to one crop or adjust his acreage to any division he wants to make between food and feed grains. The feed grain part of his farm could be seeded with a single crop or as many as his judgment indicated, but price supports for these crops would be related to each other on the basis of their feed values to corn. Mr. Case feels that corn should be the price support standard for all feed grain crops.

Since corn is a basic commodity with an annual acreage allotment, it would be necessary for the farmer to stay within his acreage allotment for corn to obtain price support for the other feed crops. The same standard would apply when soil bank payments were available. However, a farmer could avoid this standard of eligibility for price support for the non-basic commodities if he failed to plant corn acreage and substituted soybeans, sorghum grains or other feed grain crops without acreage allotment requirements.

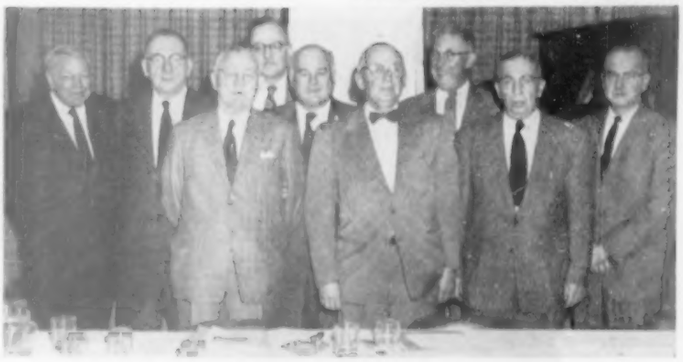
Cross-Compliance Fear

There are fears within USDA, however, that the Case plan smacks too much of cross-compliance that was bitterly opposed by farmers two years ago.

In acknowledging this cross-compliance aspect, Mr. Case comments he is convinced that although farmers may vocally oppose his plan's type of tight control, they privately admit that something must be done to halt the artificial swings which result from over-production of total feed grain supplies. This condition is currently exhibiting itself and threatening a large over-production of swine in 1958 which would create low prices for hogs.

Before leaving Washington, Mr. Case had an opportunity to discuss his ideas with congressional farm leaders who expressed interest. However, they said it will not be possible to bring the Case plan up in Congress at this time. They point out that this year the administration wants to limit farm legislation to corrective changes in the law as it now stands. These changes would fix a more realistic corn acreage allotment for the 1957 crop year and the two subsequent years, and at the same time they would amend the soil bank act to make it conform with changes planned for corn price supports.

However, these congressional leaders did not close the door on the Case plan. They indicate they will bring up the matter in Congress later.



25 YEARS AND MORE—John W. Eshelman & Sons "Quarter-of-a-Century and More Club" members posed for their picture at a recent sales meeting held in Lancaster, Pa. The men—all territorial representatives or executives at the Lancaster office are (left to right) C. L. Cooney, Albany, N.Y.; E. Morris Hoffecker, Gordonville, Pa.; Howard J. Eshelman, Sr., Lancaster, Pa.; Frank H. Strickland, Marietta, Pa.; H. S. Massie, Richmond, Va.; Frank H. Markle, Paoli, Pa.; H. P. Bond, Bangor, Maine; Paul W. Kemp, Danville, Pa., and Paul L. Siegler, Lancaster, Pa.

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WRITE for brochure, research data, sample & price

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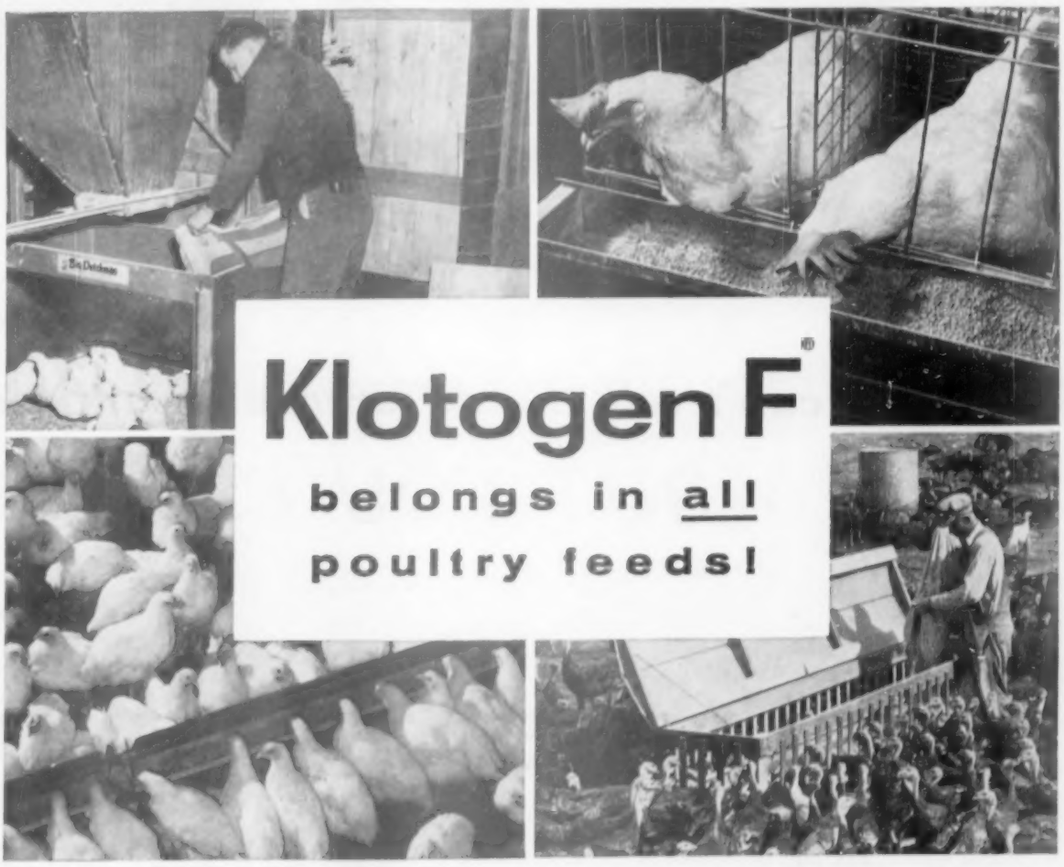

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5 **Pharmaceutically pure**—KLOTOGEN F is manufactured with the same high standards of precision and purity that have made Abbott Laboratories the nation's foremost manufacturer of vitamin K preparations for human medication and poultry feeds for 19 years.

More and more poultrymen are looking for "*menadione sodium bisulfite*" (KLOTOGEN F) on their commercial feed tags. If you want more information about this important poultry feed additive, write or call Abbott Laboratories, Chemical Sales Division, North Chicago, Illinois.

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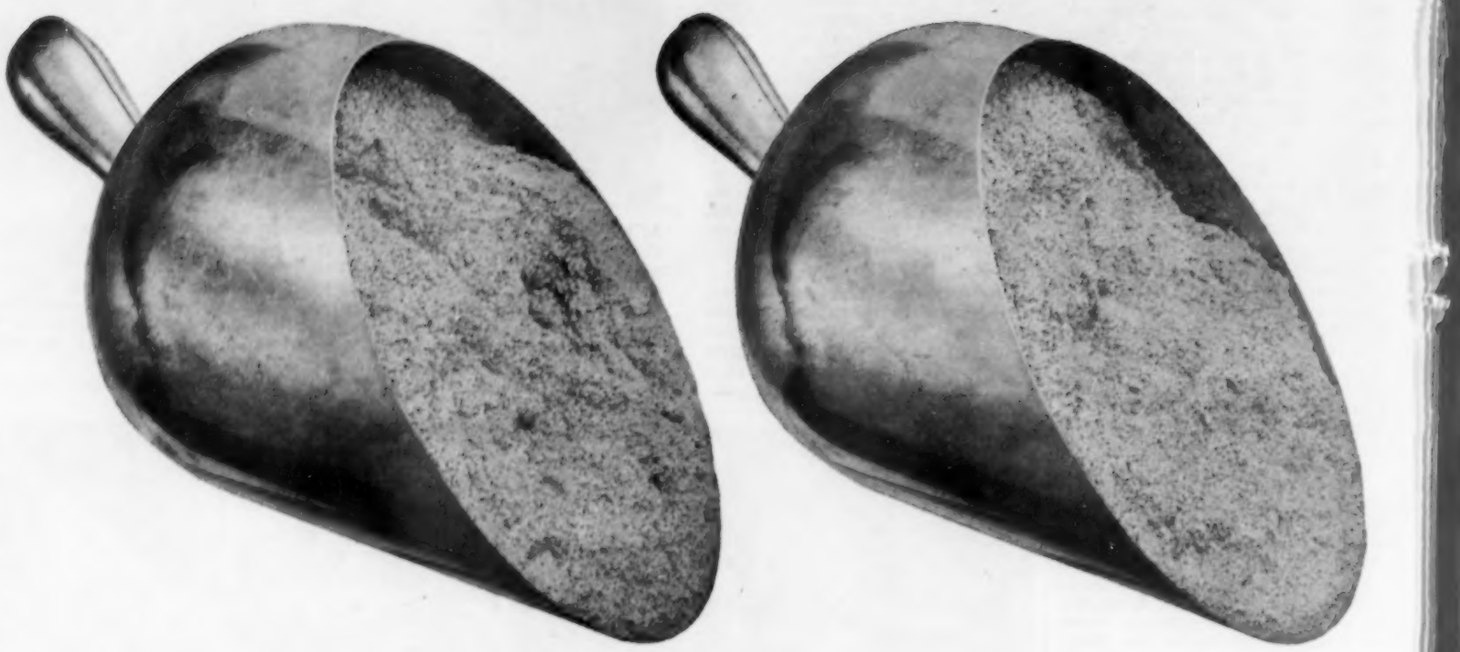


You can't tell the difference in antibiotics here

BUT YOU CAN TELL THE

you save $3 to $6 per ton

The high-level feed in one scoop contains Baciferm, the other a competitive antibiotic. One bird got the Baciferm in its feed, the other the competitive antibiotic. But you can't tell the difference! *Both gave the same good results.* Which then, is the "best" antibiotic for high-level feeds. Broad spectrum versus narrow spectrum – which is best?

Selective Activity — the key to effectiveness! Chase down the catchword "spectrum" and you'll find it has no meaning in high-level feeding. The chief concern in formulating a high-level feed is to make a product that fights secondary invaders, reduces mortality and speeds up recovery. No antibiotic can hit all bacteria nor needs to. The criterion should be an antibiotic's ability to concentrate on the dangerous bacteria without harming the beneficial ones. That's selective activity – key to *practical* effectiveness.

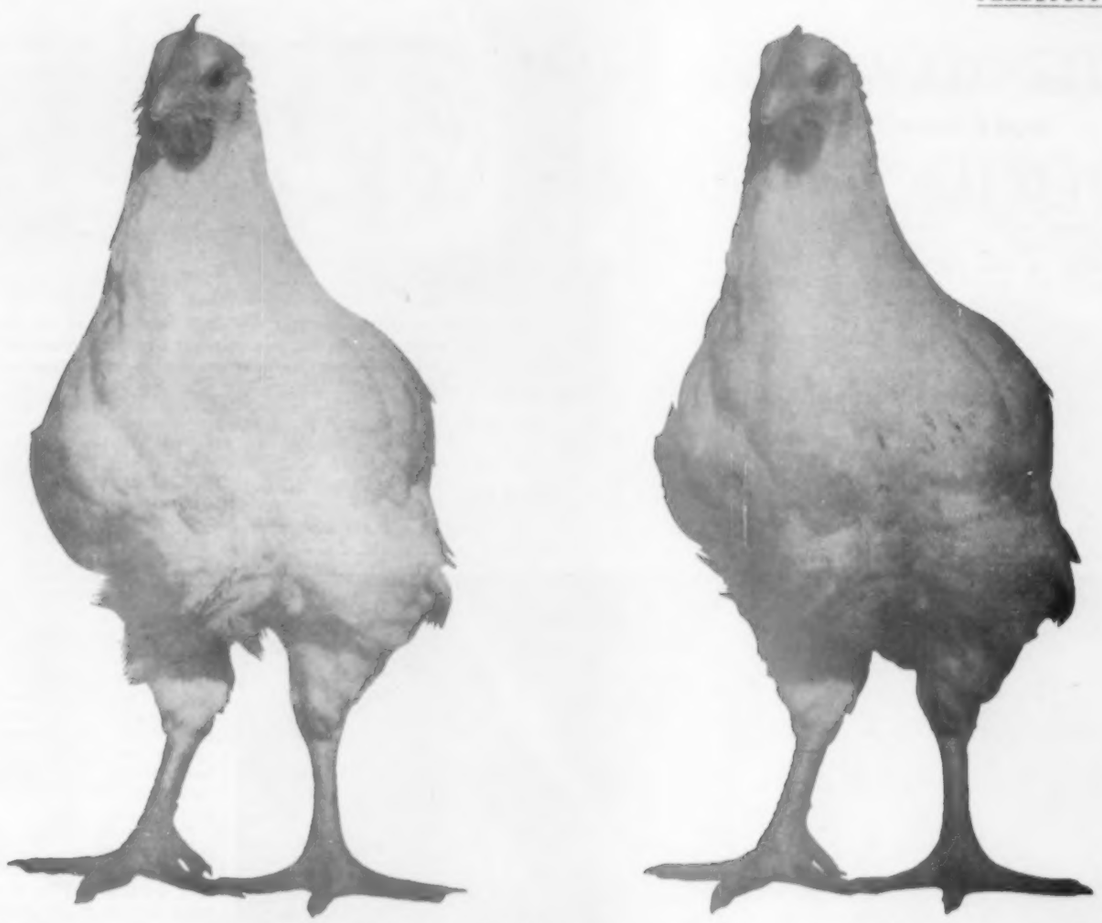
The beauty of Baciferm is its selective action – its special ability to aim its fire power on the dangerous bacteria while at the same time leaving untouched and productive the beneficial "bugs" that produce valuable vitamins and other unidentified growth factors.

Bacitracin patrols the full length of the intestinal tract! Baciferm, containing the selective antibiotic *bacitracin,* goes to work *in* the intestinal tract, safeguards its entire length, where it does its highly selective and effective job. This important advantage of Baciferm means no upset of the normal balance of bacteria in the intestinal tract. Tetracycline antibiotics, in the process of controlling the dangerous bacteria, also destroy the many favorable bacteria, thus clearing the way for yeasts and molds to multiply greatly and achieve a dangerous domination of the area.

The choice of antibiotic in high-level feeding must be made on the basis of the job to be done, and secondarily, on the cost to you. Gram for gram, bacitracin provides the same benefits the tetracyclines do, without the drawback of creating the dangerous imbalance of microorganisms in the intestinal tract. And, Baciferm saves you money at the same time.

ANIMAL NUTRITION DEPARTMENT **COMMERCIAL SOLVENTS CORPORATION**

IN CANADA: Reliance Chemicals, Ltd., Montreal, Que.



You can't tell the difference in antibiotics here

DIFFERENCE IN DOLLARS!

of feed with BACIFERM®

Baciferm evidence keeps piling up! An isolated test here and there doesn't mean a thing. Or, putting it another way, one test could prove anything. On the other hand, the evidence keeps piling up – test after test in state after state . . . college work . . . field trials . . . farm reports – that gram for gram, Baciferm saves you money while it equals the effectiveness in high-level feeding of any other antibiotic now known to science.

Keep your eye on your profits! With a sharp eye on profits, look at this arithmetic. Bacitracin costs $3 to $6 per ton *less* than the tetracyclines, an average saving of $4.50 per ton. If you produce 100 tons of high-level feed a month, this saving totals $450.00 per month. And that's $5,400 per year – saved with Baciferm!

Baciferm = bonus value, too! Baciferm is a *natural* fermentation product that contains a significant bonus value of B-vitamins, high protein, vitamin K and unidentified growth factors.

Nothing is better than Baciferm in your high-level feeds for fighting secondary bacterial invaders, for reducing mortality, for improving appetite, for speeding recovery, for stimulating growth. When you put Baciferm in feeds for broilers, layers, turkeys and swine, you're putting proved performance in the hands of your customers–and you're putting money in the bank.

Without obligation, write for the full story on Baciferm – proof of effectiveness, proof of economy, proof of satisfaction. Fill out and mail coupon today!

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CSC

For Growing Profits

"Keep in Touch," Says Feed Dealer

By Al P. Nelson

There are no two feed dealers who operate a business exactly alike. Practically every dealer has one or two points in his sales program which he stresses to advantage. By pushing such points many a dealer is able to operate more profitably and win more customers.

J. D. Rutherford, owner of the Farmers Feed & Supply Co., Millington, Tenn., credits a 3-point program in helping him get fine volume year after year. Here are the points in the program:

1. Frequent contacting of customers.

2. Effective interior display, especially of new items.

3. Extra services such as poultry counseling and a "for sale" board.

Mr. Rutherford operates routes and likes to visit his customers regularly. He finds it profitable to spend a lot of time with them, explain new products, talk over feed needs and look at flocks and herds. This type of program, he states, is very effective in a long run. After he has visited a farmer and becomes acquainted with his special feeding problem, he can often get a standing order of so much feed every week or two weeks, which the delivery man can deliver at special times.

"We find, however, that farmers must be contacted periodically if you want to keep them sold," Mr. Rutherford states. "Unless a dealer revisits and resells his customers he may lose a few now and then. Two of us spend as much time as we can with our regular customers on outside selling."

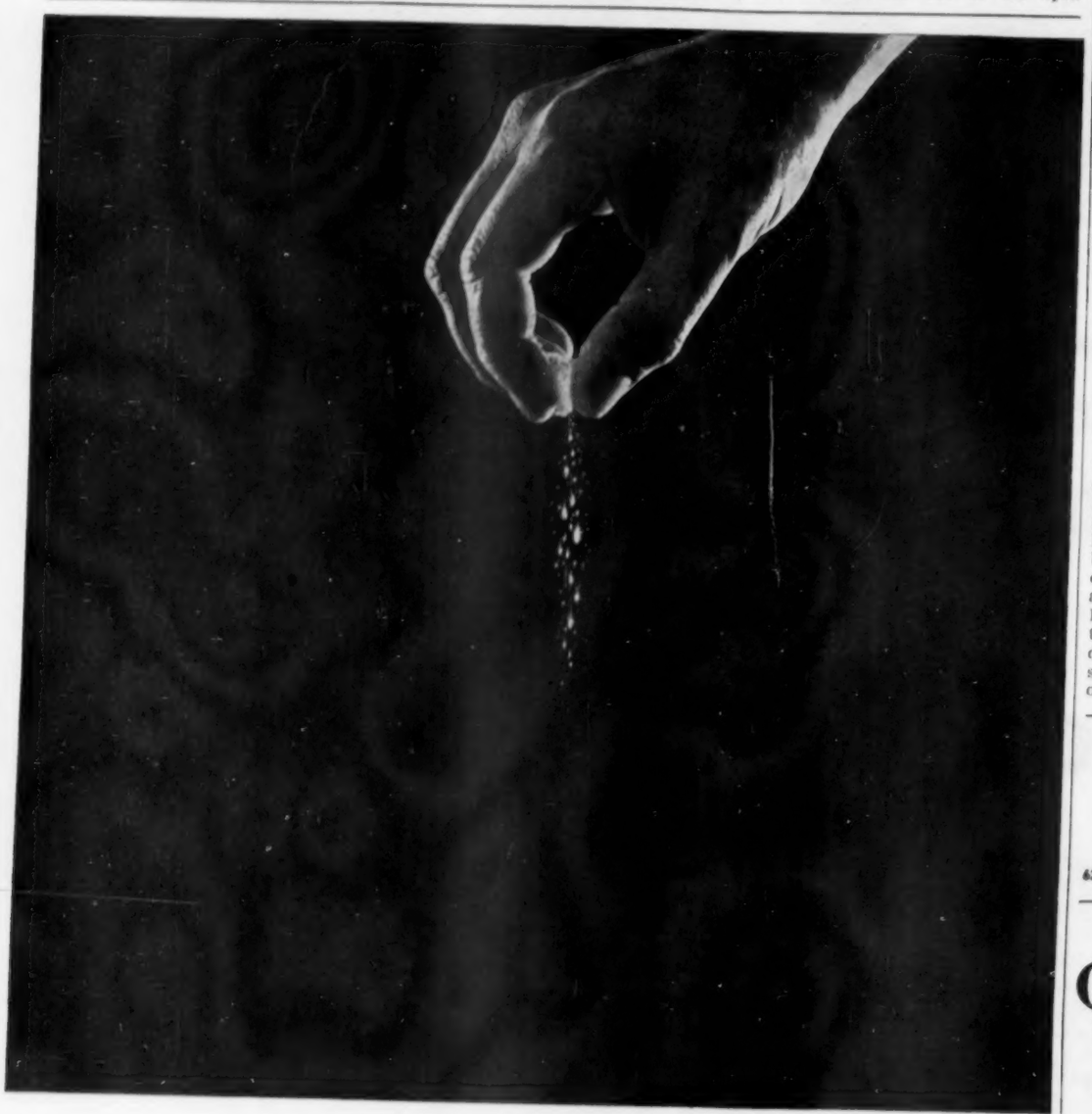
LIVE DEMONSTRATIONS—Most any week customers of the Farmers Feed & Supply Co., Millington, Tenn., can watch a live demonstration in progress at the store. A demonstration pen near the front customer entrance is shown in the above picture.

When it comes to interior display, Mr. Rutherford believes in getting the merchandise out in the open where customers can see it. "What they do not see, they will not buy," is his theory, "unless you call it to their attention." He believes this is particularly true about new feeds and other farm products. When he takes on a new product he tries to give it prominent showroom display, with signs placed around it, and he tries to mention the new product to customers.

"If the farmer comes into the showroom and sees a product displayed that you have handled for a long time, he won't ask about it, or look at it," says Mr. Rutherford. "He takes that display for granted. But if you have a new product, well displayed, many farmers will notice it and ask questions. That is our chance to sell him."

Farmers see more than they let on when they walk through a showroom, says Mr. Rutherford. He says that impulse buying works in a feed store just as in any other. Therefore, if the dealer has many items on display, the better his chances for impulse sales.

A large share of this dealer's feed business is with poultry feeds, with dairy and hog feeds a close second. Mr. Rutherford goes after the large feed buyer as well as the small one. He will often try to get farmers to buy large lots directly out of the car. This saves time, excess handling and warehousing, he says. When the large buyer can save a little in this type of buying, he frequently likes to do it. Large lot buyers frequently stick with the dealer who goes out of the way to let them buy on such



A little Dow Methionine goes a long, long way

Just a little Dow Methionine goes a long, long way toward greater formula flexibility . . . and customer satisfaction.

Added Dow Methionine lets you take advantage of good ingredient buys—without sacrificing feed efficiency. By using Dow Methionine, one of the most effective amino acids, you can maintain proper protein-calorie ratios without the expense of buying high-cost ingredients.

Adding Dow Methionine will also go a long way toward making new customers . . . and repeat customers for your feeds. They'll find that your formulas, containing Dow Methionine, mean improved feathering and better conversion of pounds of feed to pounds of meat.

Yes . . . just a little Dow Methionine goes a long, long way . . . toward more profits for you. For complete information write to: THE DOW CHEMICAL COMPANY, Agricultural Chemicals Sales Dept., Midland, Michigan.

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Question:
Who sells DOW Methionine for healthier, handsomer animals?

Answer:
BOWMAN FEED PRODUCTS, INC.
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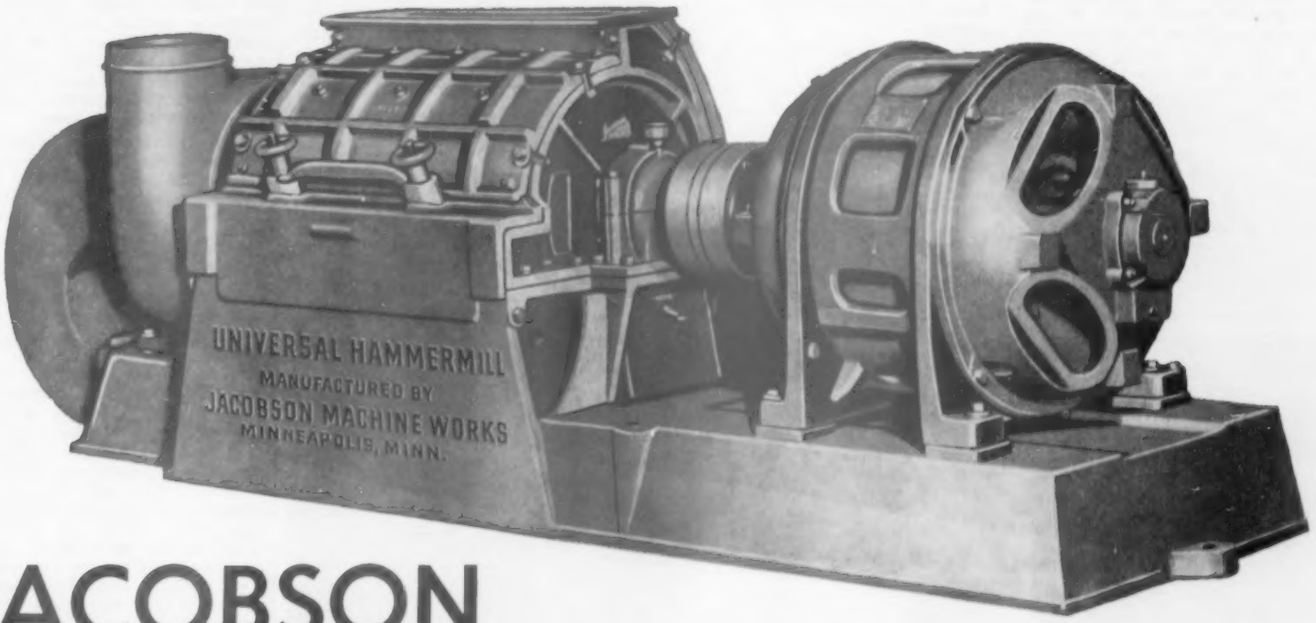
It takes the best hammermill to do the best grinding!



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All new Jacobson Hammermills are now being furnished with Jacobson Hard-Faced Hammers as standard equipment. A concave wear pattern provides sharp cutting edges throughout the exceptionally long life of Jacobson Hard-Faced Hammers. To achieve this pattern and long life, Jacobson engineers and metallurgists **started** with hammers comparable to the finest found elsewhere. They subjected these hammers to additional surface hardening and hard facing techniques in special Jacobson heat-treating furnaces. The result was a hard-faced hammer at the very **peak** of abrasion-resistant toughness and long life.

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47 Years of Continuous Service to the Feed Industry

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a basis at a favored price over the small lot buyer.

The small lot customer, on the other hand, also gets good treatment at this feed store. He's the chap who comes and buys one to five bags at a time, plus poultry equipment and remedies now and then. Because he usually has another source of employment he has a regular paycheck and he pays for his feed on a cash basis most of the time. Mr. Rutherford likes to get this business also and makes a special effort to talk with such small lot buyers and find out if they have feeding problems with which he can also help.

"A dealer today has to have both types of business if he is to attain a good volume," reports Mr. Rutherford. "The little sales count up, too, because there are so many of them. The small lot poultry feed buyer may also buy a few bags of fertilizer, some seeds, insecticides and sprayers. He may spend over $300 in our store annually and so is a customer worth cultivating."

Farmers usually have some machinery or other items to sell or exchange, and they are looking for places where they can advertise such items free. Mr. Rutherford has a large bulletin board where farmers can advertise these products, and this helps to swell store traffic. New farmers who want to buy used items frequently visit feed and other stores where they think there may be such bulletin boards, and thus the opportunity is presented to win new feed patrons.

Mr. Rutherford also sells baby chicks seasonally, and he finds that this activity brings many customers into his store in spring. Many pounds of feed go along with the sale of chicks, as a rule, and many new customers are thus secured.

Practically every farmer and small home owner has need of an additional fork, shovel and rake. For these customers Mr. Rutherford carries a sizable stock of yard items. They are displayed on the wall of the store where they can be seen and stimulate impulse sales.

Live display in season, too, has proved to be an excellent way for Mr. Rutherford to get increased store traffic and to center discussion on feeds. Often he will have special growing and feeding demonstrations on chicks, small pigs and calves. Customers always stop to see how these demonstrations are working out.

Thus by using a combination of sound demonstration, display, sales and service policies, Mr. Rutherford is getting a good share of the local area business and is planning to get more.

Murphy Names Agency

BURLINGTON, WIS. — The Murphy Products Company, Burlington, Wis., has appointed Aubrey, Finlay, Finlay, Marley & Hodgson, Inc., Chicago, as the firm's advertising agency, effective March 1, according to Thomas C. Burchard, vice president, advertising.

S. E. Supply Outlook for Broiler Hatching Eggs Adequate to Excessive

RICHMOND, VA.—The supply outlook for broiler-type hatching eggs in the Southeast during the next month appears to be generally adequate to plentiful or excessive.

This is one of the highlights of the January issue of the "Southeastern Broiler Situation," monthly summary of broiler conditions in 10 southeastern states prepared for members of the Southeastern Poultry & Egg Assn. The report is based on observations by experienced poultrymen throughout the area.

The hatching egg supply on Jan. 1, 1957, was the same or 5 to 15% greater than a month earlier. Excessive supplies were noted by one third of the observers, principally in Georgia, Kentucky, North Carolina and Virginia.

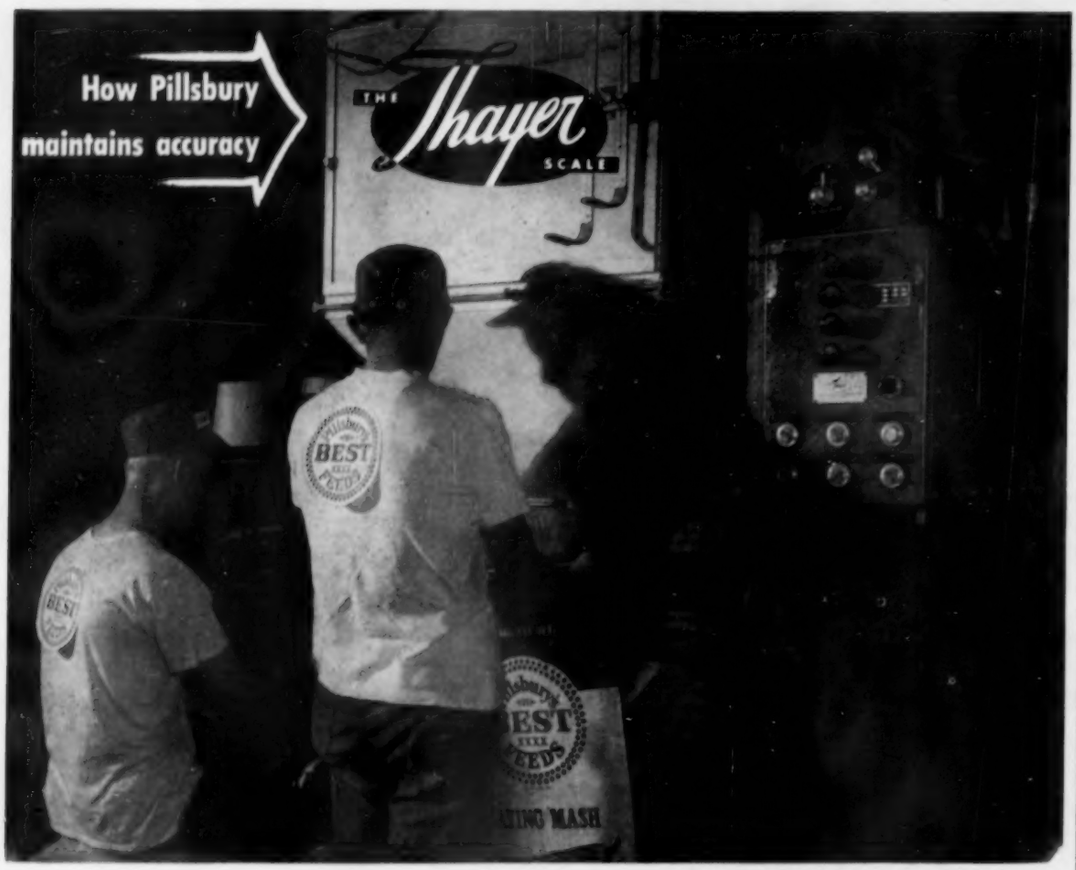
Breeder birds for broiler-type egg production tested for pullorum during December in eight of the 10 states were 38% higher than a year earlier.

Little change from the previous month was noted by either producers or feed dealers in the amount of interest in placing broiler chicks.

The price outlook for January and February appeared comparatively favorable. A few observers foresaw advances of as much as 6¢ over late December. Almost one third listed a 2¢ rise for the January outlook—as represented by the 17¢ prices the week ending Jan. 11. About one fourth of the observers expect February prices to be 3¢ higher than late December.

IOWA FIRMS MERGE

BREDA, IOWA—The Scheelle Seed Co. and the Breda Grain Co., Breda, Iowa, have merged under the name of the Breda Grain Co. Wayne Scheelle, who formerly operated the Scheelle Seed Co., has been named manager of the seed and fertilizer division. Robert Gaffney is manager of the Breda Grain Co. which was formed here last summer.



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mixes uniformly...available everywhere

Your cattle and sheep feeds have extra sales appeal when they contain Du Pont "Two-Sixty-Two" —the first and finest urea source of protein. That's because "Two-Sixty-Two" stimulates billions of rumen bacteria to converting coarse feedstuffs and roughage into easily digestible nutrients.

Du Pont "Two-Sixty-Two" flows freely and mixes uniformly, assures you consistent performance in feed-mixing operations. Agents located in key cities (listing below) put "Two-Sixty-Two" within trucking distance of feed manufacturers large and small. This means you get faster service and prompt shipments.

Feed Facts Worth Talking Over
TWO-SIXTY-TWO
You can depend on your feed man to supply you with balanced rations and also information on economical cattle nutrition. Be sure to ask him about the advantages Du Pont "Two-Sixty-Two" offers in your protein supplement.
Ask your feed man how Du Pont TWO-SIXTY-TWO® FEED COMPOUND makes your ration more efficient
You: "I want to get as much nutritional value as possible from the feed I buy. Just how will Du Pont 'Two-Sixty-Two' in my ration help me get this efficiency?"
Your Feed Man: "The efficiency of your ration depends a lot on the ability of rumen bacteria to convert coarse feeds into a form that your cattle can digest thoroughly."
You: "Does 'Two-Sixty-Two' help these bacteria make my feed more digestible?"
Your Feed Man: "It certainly does, and Du Pont 'Two-Sixty-Two' also helps you get more feed value from roughage. That's because 'Two-Sixty-Two' is a highly nitrogen source of simple protein. It stimulates rumen bacteria to... Therefore, billions of... making nutrients..."

No. 1 of a series— nationally advertised to help you sell feed

This is one of a new series of advertisements appearing in farm magazines. They encourage farmers to talk over with you the advantages of including Du Pont "Two-Sixty-Two" in their cattle and sheep feeds, and thus help you sell feed.

This bag of "Two-Sixty-Two" was cut open for inspection after warehouse storage in a hot, humid region. It was in excellent, free-flowing condition.

For "Two-Sixty-Two"... the first and finest urea source of protein, contact your agent or nearest Du Pont office

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FE/460

BUSINESS GROWS—Diversification, both in types of feeds and in related lines of merchandise, has aided Roy L. Hermansen and his son, N. L. Hermansen, owners of Hermansen's Mill, Gunnison, Utah, to expand steadily. A picture of their plant is shown above. A fairly recent addition to their line is trout feed which is sold to a number of western trout hatcheries.

Utah Feed Firm's Owners Rewarded For Faith in Sound Business Policy

By Jess Blair

Nearly anyone can build up a big feed business by giving easy credit and selling on a small margin, according to Roy L. Hermansen, owner of Hermansen's Mill, Gunnison, Utah. Such a merchant seldom lasts long but he can really hurt his competitors and the feed industry, he feels.

Mr. Hermansen recalls the period of a few years ago when there were many cases of unsound financing of turkey raisers. This had disastrous effects, he feels. In 1945 the Hermansens, Roy L., and his son, N. L., were selling feed for about 750,000 turkeys in north central Utah. The business was profitable and banks financed the equipment and birds by taking a note on securities. The Hermansens put out the feed and took a mortgage on the turkeys. Mr. Hermansen said that the producers were well screened and did so well that losses to the feed company amounted to only 1¼%.

Without sound financing Mr. Hermansen tapered down on the turkey feed business but he says the experience has been helpful, educational and profitable in the long run. Marginal growers have left the business. He has expanded into range feeds, trout feed and sales of allied equipment. In addition, farmers have learned that unsound financing and over specialization can be disastrous and several have returned to turkey raising on a sound and efficient basis. Sales of turkey feeds are climbing steadily once again.

With varied feed manufacturing equipment, Mr. Hermansen says he is able to supply a variety of feeds, such as trout feeds which are gaining popularity in the West. The feed is made at the mill and shipped out to several fish hatcheries. The quantity is not too great yet, but it is growing, and the feed is a long profit item, he says.

Another expansion was in range feed for sheep and cattle owners. Since the mill could make any type of feed, the business of ranchers was sought. One nice thing about this is that large amounts of feed can be mixed at one time, because the ranchers buy in large quantity.

The Hermansens also had an ace in the hole with their flour sales, one that had been built up over many years. This is selling flour to an Indian reservation in Arizona. "We always tried to treat the Indians just like our best customers,

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which indeed they are," said Mr. Hermansen. "They buy their flour from us, and receive it in trucks several times a year."

After the turkey losses became apparent several years ago, the Hermansens started stocking other merchandise. One good profit maker has been the sale of fertilizers and insecticides. During the last year or so weed killers have been increasing in use.

Sales Climb Steadily

Also pet foods have been pushed, with the results that sales have been climbing steadily.

During the last year or so the Hermansens have been working with farmers on a complete feeding program. The farmers bring grain to the mill where it is ground and mixed with concentrates. Dairy and poultry feed sales have been unusually good and are bound to increase faster as soon as the drouth is broken.

Despite temporary setbacks, such as the turkey situation and the drouth, "our profit is just as great as it ever was," Mr. Hermansen says. "We are expanding in several directions and all our experiences have taught us lessons."

Another thing the Hermansens have learned is that personal service with a customer's feeding problems is always a good investment. They now give more personal help, visit with farmers and constantly study the changing agricultural patterns to see if any new products can be used to advantage.

"I think I can safely say we'll be in business a long while," said Mr. Hermansen, in conclusion. "My father put in his first mill in Utah nearly 75 years ago. It was handed down to me, and now I'll soon be leaving it to my son. With us the feed mill is a family institution. By keeping up with the times and practicing close management, we plan to keep it in the family for a long, long time yet."

CONVENTION CALENDAR

Jan. 28-30 — Southeastern Poultry & Egg Assn.; Dinkler-Plaza Hotel, Atlanta; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Jan. 30-Feb. 2—American Dehydrators Assn., Edgewater Gulf Hotel, Edgewater Park, Miss.; exec. vice pres., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City, Mo.

Jan. 31-Feb. 1—University of New Hampshire Poultry Health Confer-

(Continued on page 22)

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- **MARDEL BY-PRODUCT CORP. • Salisbury, Md.**
- **NORTH GEORGIA RENDERING CO. • P.O. Box 256, Canton, Ga.**
- **POULTRY BY-PRODUCTS CO. • Canton, Ga.**
- **SMITH-ROWLAND CO. • Division of Smith-Douglass Co., Inc., Norfolk, Va.**
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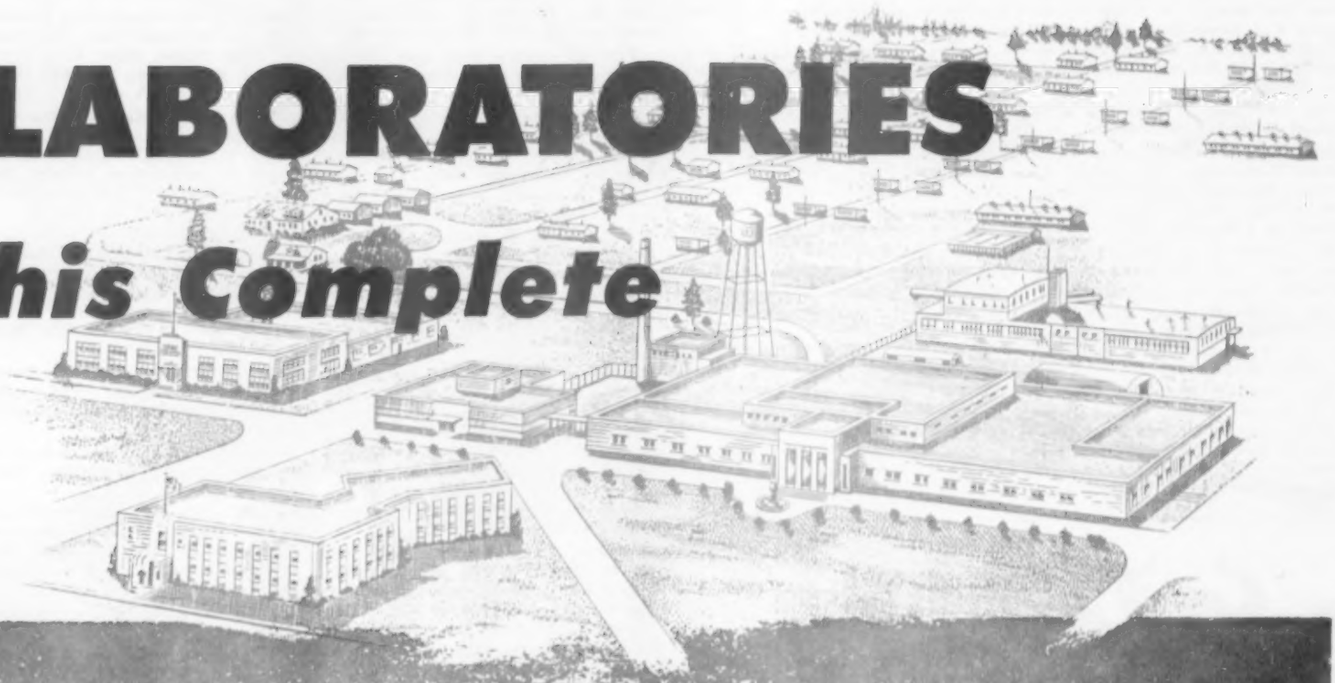

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ence; University of New Hampshire, Durham, N.H.; chm., Prof. W. C. Skoglund, Poultry Dept.

Feb. 4-5 — Cottonseed Processing Clinic; Southern Utilization Research Branch, U.S. Department of Agriculture, New Orleans, La.; chm., E. A. Gastrock, 1100 Robert E. Lee Blvd., New Orleans, La.

Feb. 4-6—Assn. of Southern Agricultural Workers, Birmingham, Ala.

Feb. 5-6 — Hoosier Turkey Trot; Purdue University; sec., David D. Jackson, Indiana State Poultry Assn., Turkey Dept., Poultry Bldg., Purdue University, Lafayette, Ind.

Feb. 7-8—Oregon Animal Industry Conference; Oregon State College, Corvallis; chm., Dr. J. R. Parker.

Feb. 10-12—Wyoming Grain, Feed & Seed Dealers Assn., Casper; sec., Everett L. Berry, P.O. Box 118, Sheridan, Wyo.

Feb. 10-12—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque, N.M.; sec., H. B. Hening, P.O. Box 616, Albuquerque, N.M. (This is a change in dates from previous listing. Convention was postponed to this date from Jan. 13-15.)

Feb. 13—Mutual Millers & Feed Dealers Assn.; Lafayette Hotel, Buffalo, N.Y.; sec., Mrs. Gustavus A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Feb. 14-15 — Washington State Feed Assn.; Olympic Hotel, Seattle; sec., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 14-15 — Utah Feed Manufacturers & Dealers Assn.; Brigham Young University, Provo, Utah; sec.-treas., Dr. Lawrence Morris, Animal Husbandry Dept.

Feb. 15-17—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; pres., Cliff D. Carpenter, 221 North LaSalle St., Chicago 1, Ill.

Feb. 17-19 — Midwest Feed Manufacturers Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 18 — New Mexico Feeders Day; New Mexico A&M College, State College, N.M.; chm., J. H. Knox, animal husbandry department.

Feb. 19-20 — Virginia Polytechnic Institute Nutrition School for Feed Men; Hotel Roanoke, Roanoke, Va.; chm., Paul M. Reaves, department of dairy science, VPI, Blacksburg, Va.

Feb. 21—Illinois Feed and Nutrition Conference; University of Illinois, Urbana.

Feb. 24-26 — Ohio Grain & Feed Dealers Assn.; Neil House Hotel, Columbus, Ohio; sec., G. E. O'Brien, Ohio St., Greenville, Ohio.

Feb. 24-26—Colorado Grain, Milling & Feed Dealers Assn.; Denver, Colo.; sec., R. B. Kelly, 714 Cooper Bldg., Denver 2, Colo.

Feb. 26-27—Poultry Housing and Equipment Conference; Pennsylvania State University, University Park, Pa.; chm., Prof. Glenn O. Bressler, Department of Poultry Husbandry.

March 3-9 — Southeastern School of Management for the Poultry Industry; Continuing Education Center, University of Georgia, Athens, Ga.; chm., Harold E. Ford, Southeastern Poultry & Egg Assn., 307 Forrest Blvd., Decatur, Ga. (First of three one-week sessions. Others scheduled weeks of July 28 and Nov. 3.)

March 4-8 — Ohio Elevator and Farm Supply Short Course; Ohio State University; sponsor, College of Agriculture, Ohio State University, Columbus 10, Ohio.

March 13—Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; exec. director, Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 13-17 — Grain Processing Machinery Manufacturers Assn.; Edgewater Gulf Hotel, Edgewater Park, Mississippi; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

March 14-15—Oregon Feed & Seed Dealers Assn., Multnomah Hotel, Portland; mgr., Huss Hayes, Lewis Bldg., Portland 4, Ore.

March 14-16 — Pacific Dairy & Poultry Assn.; Ambassador Hotel, Los Angeles; assn. office, 1304 E. Seventh St., Los Angeles 21, Cal.

March 17-18—Quad-State Convention; Martin Hotel, Sioux City, Iowa; sec., Don Suttie, Sioux City Grain, Feed & Seed Assn., Box 341, Sioux City.

March 21-22 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. G. Lynn Romoser, Department of Poultry Husbandry, University of Maryland, College Park, Md.

April 2-4—Louisiana Market Poultry Show and Chicken of Tomorrow Contest; Bentley Hotel, Alexandria, La.; chm., Clyde Ingram, extension poultryman, Louisiana State University, University Station, Baton Rouge, La.

April 3—Purdue Egg Day; Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

April 4-6—Animal Health Institute, annual meeting; Greenbrier, White Sulphur Springs, W. Va.

April 8-10 — American Association of Feed Microscopists; Phoenix Hotel, Lexington, Ky.; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

April 10-11—Texas Feed Manufacturers Assn.; Gunter Hotel, San Antonio, Texas; sec., Ben E. Schmitt, 528 Bewley Bldg., Ft. Worth, Texas.

April 12-13—Texas Grain & Feed Dealers Assn.; Gunter Hotel, San Antonio, Texas; sec., Ben Ferguson, 614 Meacham Bldg., Ft. Worth 2, Texas.

April 25-27—California Hay, Grain & Feed Dealers Assn.; Hotel Fairmont, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

April 25-27—Kansas Grain & Feed Dealers Assn., Broadview Hotel, Wichita, Kansas; sec., O. E. Case,

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April 26 — Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., W. M. Beeson, Department of Animal Husbandry, Purdue University, Lafayette, Ind.

April 26-May 1—National Fisheries Institute; Edgewater Beach Hotel, Chicago; Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 1-3 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec.-treas., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 5-7 — Louisiana Poultry Improvement Assn.; Frances Hotel, Monroe, La.; chm., Clyde Ingram, extension poultryman, Louisiana State University, University Station, Baton Rouge, La.

May 19-20 — Missouri Grain, Feed & Seed Assn., Hotel Connor, Joplin, Mo.; sec., D. A. Meinershagen, Eagle Mill & Elevator, Higginsville, Mo.

May 20-21 — National Cottonseed Products Assn.; Shoreham Hotel, Washington, D.C.; sec., John F. Moloney, 19 S. Cleveland St., Memphis 4, Tenn.

June 6-8 — Canadian Feed Manufacturers Assn.; Saskatoon, Sask.; sec., A. J. Bunn, Intercontinental Packers, Ltd., Saskatoon, Sask.

June 9-11—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

June 10-11—Eastern Federation of Feed Merchants; Hotel Commodore, New York; exec. dir., Austin W. Carpenter, Sherburne, N.Y.

June 11-12 — Montana Nutrition Conference; Montana State College, Bozeman; chm., O. O. Thomas, Animal Industry Department.

June 11-13—Alabama Poultry Industry Assn.; Thomas Jefferson Hotel, Birmingham, Ala.; sec., P. O. Box 567, Montgomery, Ala.

June 17-18—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 3240 Peachtree Road Bldg., Room 216, Atlanta 5, Ga.

June 17-19—Association of Southern Feed & Fertilizer Control Officials; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky.

July 16-19 — American Poultry & Hatchery Federation; Municipal Auditorium, Kansas City; sec., Don M. Turnbull, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 19-20 — Wisconsin Nutrition School for Feed Men; Memorial Union, University of Wisconsin, Madison, Wis.; co-chm., Gus Bohstedt and Robert H. Grummer, department of animal husbandry.

Sept. 11-12—Michigan State Hatchery Conference; Michigan State University, East Lansing, Mich.; chm., Harry E. Hathaway, Michigan State Poultry Improvement Assn., East Lansing, Mich.

Sept. 11-13 — American Pet Food Manufacturers; Drake Hotel, Chicago; sec., R. L. Kathe, APFM Division of American Feed Manufacturers Assn., 53 W. Jackson Blvd., Chicago 4, Ill.

Oct. 3-4—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, poultry science department.

Oct. 7-9 — Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Oct. 14-16—Virginia State Poultry Federation; Hotel Roanoke, Roanoke, Va.; chm., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 16-17—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; exec. sec., L. E. Bopst, Room 036 New Chemistry Bldg., University of Maryland, College Park, Md.

A. K. Martinson

PROMOTED—A. K. Martinson has been promoted to sales engineer with the Strong-Scott Manufacturing Co., Minneapolis. He has been on the company's sales service staff in Minneapolis for the past year. Mr. Martinson will serve eastern and southern Wisconsin and northern Illinois territories for the grain processing equipment division. He is a native of Iowa, and attended Drake University, Des Moines. He was formerly a millwright with the Geo. Todd Construction Co.

California Event Set

DAVIS, CAL.—Animal Husbandry Livestock Day is scheduled for Jan. 26 on the Davis campus of the University of California. There will be talks and demonstrations on new developments in the feeding and management of dairy cattle, sheep, beef cattle, horses and swine. University faculty specialists and farm advisors will be on the program, which is held annually for livestock men by the animal husbandry department at Davis.

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More Integration Predicted In Kansas Conference Talks

By THOMAS E. LETCH
Feedstuffs Editorial Staff

MANHATTAN, KANSAS—Nearly 300 feed men attended the 12th annual Formula Feed Conference at Kansas State College Jan. 7-8. In addition to a program packed with information on the latest animal nutrition research, the feed men found at the college new facilities for the conference that match the best in the country.

The educational sessions were held in Umberger Hall, a new extension building, and the banquet was held in the new Student Union, both structures that have been completed since last year's feed conference.

Speakers from Cornell University, the University of Arkansas and Oklahoma A&M College, along with several industry speakers, added their research information to that of Kansas State men on the program.

Poultry Industry Integration

A panel discussion on the trend toward integrated poultry operations, moderated by Maurice Johnson, Staley Milling Co., Kansas City, opened the program. John Randolph, Corn Belt Hatchery, Hope, Ark.; Jack Grubb, Midwest Feed Mills, Abilene, Kansas; Harold McCurdy, Great Bend (Kansas) Poultry Co., and Gordon Johnson, Gordon Johnson Co., Kansas City, were the panel participants.

Integration was defined as an operation in which one man owns and manages all parts of an operation to provide poultry products for the consumer. Parts of the operation would include the hatchery, the feed mill, the rearing quarters and the processing plant.

"Alignment"

Similar, but not the same, it was concluded in the discussion, is alignment. This is a cooperative kind of integration in which different owners —the hatcheryman, the feed man, the grower and the processor—coordinate their operations so as to achieve added efficiencies in providing a uniform quality product.

Mr. Randolph cited instances where completely integrated operations are not working as they should because, he said, the owner can't get competent men to operate all the different phases of the business. He held up alignment as a superior method of "integration" since it retains the incentive system in each phase of the operation, but still provides the coordination.

A danger in the complete integration was said to be the establishment of a "peonage system," with the emphasis on a guaranteed income.

Mr. McCurdy said he sees in the integration trend a danger that workers on the "bottom end of the ladder" will acquire socialistic ideas that may some day be matched by those in control of our government, with the result that the present U.S. system would be tipped over.

Mr. Grubb said he can see as an advantage for a feed mill of integration or alignment the reduction of sales costs so that those savings can be used to provide better service for the growers.

Service and Supervision

Service and supervision were held out as being the keys to success of large poultry operations, whether for broiler or for egg operations. And since, in many cases the feed company bears the burden of financing a feeding operation, the company also bears the responsibility for supervision, it was said.

But whether the integration or

(Continued on page 28)

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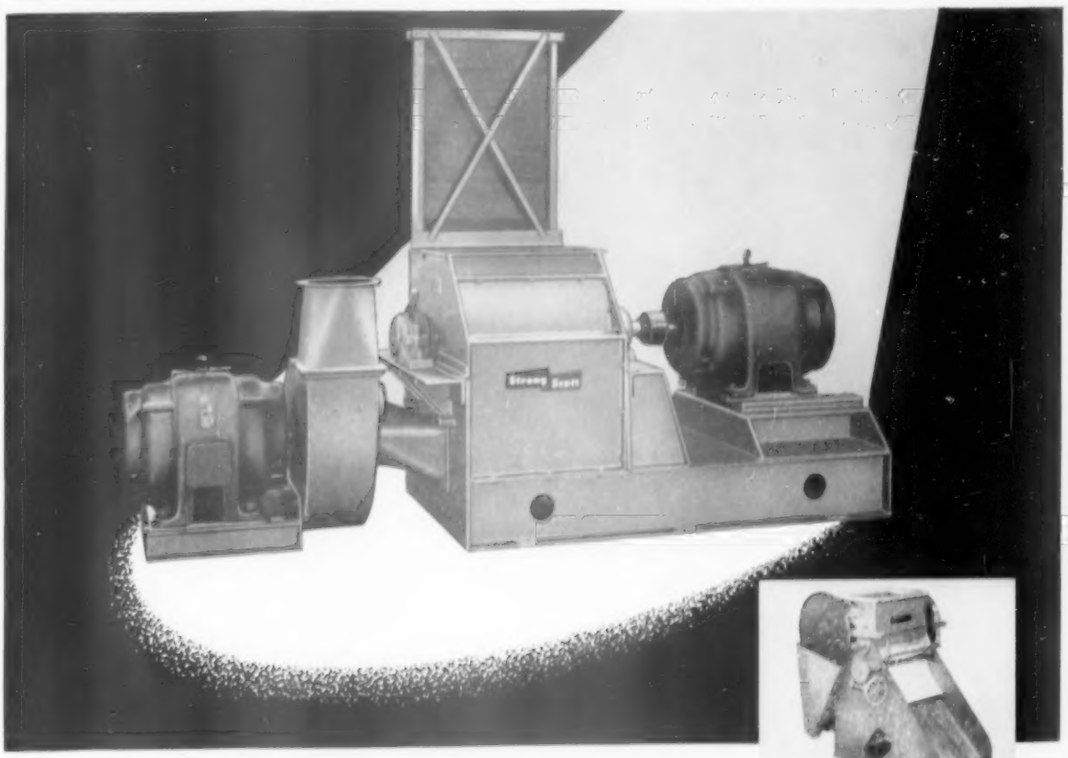

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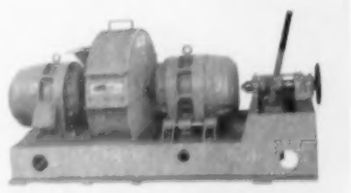

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As promising new findings come from the laboratory they are put to the practical test with hundreds of real cows or steers. And as soon as a new development is proved out, America's progressive feed manufacturers stand ready to bring these benefits of science to the farm in the feed bag.

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This advertisement, one in a continuing series on behalf of the scientific advances being incorporated in today's fine formula feeds, is currently appearing in Successful Farming, Farm Journal, Ag Leader's Digest, County Agent and Vo-Ag Teacher.

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alignment trend is good or bad, the panelists agreed that there will be more of it—in egg laying operations, in cattle feeding and swine growing—as farms becomes more specialized.

As an indication of this swing, Gordon Johnson said that 10 years ago poultry processing plants were put in by individual operators, and now 50% of the plants his company puts in are being built for integrated or aligned operations.

Following are reviews of conference reports on new developments and findings in ruminant, poultry and swine nutrition and certain specific aspects of feeding:

RUMINANTS—Dr. J. Thomas Reid, Cornell University, presented information on the nutrition of dairy cattle. While more information must be obtaied before any recommendations are made, Dr. Reid said, the material he presented indicated that low level feeding of a heifer before her first calving tends to increase the cow's production in lactations after the first, and tends to prolong the cow's productive life.

"The finding that the rapid growth during early life is not compatible with a long span of life in several kinds of animals suggests that methods of feeding young cattle may have significance beyond the mere cost of feeding during the rearing period," he said.

Dr. Reid reported on experiments conducted in the Scandinavian countries, in New Zealand and at Cornell to determine the effects of the amount of feed consumed during early life upon the lifetime performance of dairy cattle.

Cornell Work

The Cornell work, started in 1948, is intended, he said, to simulate three feeding conditions, ranging from large amounts of high-quality feeds to small quantities of poor-quality feeds. In the experiment, the levels of TDN as a percentage of the upper level recorded in the Morrison feeding standards fed from birth to the time of first calving are: low, 65; medium, 100; high, 140. The main difference in quality between the treatments is in the pastures and roughage feeds. After the first calving, all cows, irrespective of previous treatment, are fed the same feeds in amounts determined by their size and yield. All heifers, regardless of size, are bred for the first time at 18 months.

Dr. Reid pointed out that the Cornell and other experiments demonstrate that heavily-fed heifers are sexually mature earlier in life than those fed normal or less than usually recommended amounts of feed. Heifers fed small or normal amounts of feed have conceived for the first pregnancy with slightly more ease than those fed large amounts during early life. Difficult calving at the first parturition has occurred oftener among heifers of the low group than the other two groups, presumably because of the smaller body size, he said.

The average weights of the cows of the three groups immediately after first calving, are: low, 876 lb.; medium, 1,058; high, 1,209. However, he said, "cows of the low-level group weighing 250 to 400 lb. less than normal at first calving approach the size of the medium group by second calving if fed liberally during the first lactation period."

Among other indications from the data available, Dr. Reid cited the following:

- The amount of feed provided from birth to first calving does not affect the level of production during the first lactation period. In subsequent lactation periods, the high level cows have yielded somewhat less milk and fat than cows of the other two groups. (All cows, regardless of early feeding treatment, are being fed liberally beginning immediately after first calving.)
- Scanty feeding during early life tends to prolong productive life as much as 20 months.
- Feeding large quantities of milk and complex dry-starter feeds to calves for extended periods is an uneconomical practice. Good growth has been obtained on all-roughage and pasture rations after six months of age.

Dr. Reid pointed out that in addition to lifetime performance, appearance of animals has monetary signifiance. "Animals of the low group as old as 2½ years are not so pleasing to the eye as cows of the other groups and rate somewhat lower on conformation scores. However, by the time they are 4 years old, they would be preferred by cow judges."

In conclusion, Dr. Reid emphasized that he was not recommending a change in the presently used rearing methods. "Much more information is needed to determine whether providing more or less feed than that presently recommended for heifers is feasible. The final answer will depend upon the lifetime performance, associated economics and the standards of the 'eye of the master'," he said.

Concentrate-Roughage Ratios

In another appearance, Dr. Reid discussed the nutritional effects of varying concentrate-roughage ratios in relation to feed input-milk output by dairy cows.

As the composition of a ration approaches 100% concentrates, milk yield declines, the fat content of the milk is reduced, the milk fat becomes more unsaturated and contains less of the volatile fatty acids, and the proportions and total amounts of short-chain volatile fatty acids in the ruminal ingesta are altered. In addition, Dr. Reid said, a number of indications of digestive disturbance such as a reduced rate of rumination, cessation of rumination, bloating and constipation occur.

An inadequate energy intake results in a decline in total milk yield, in the amount of solids-not-fat in the milk, in a loss of body condition and in reduced monetary returns. "Economically," he said, "increasing feeding intensity is justified when the market value of an increment in milk yield exceeds the cost of the additional feed needed to produce it."

However, since an intake providine a high level of energy is needed during early lactation to realize the high potential for production during this period, the feasibility of increasng the intensity of feeding is determined by the physiological demands of the animal as well as the economic factors, he pointed out.

Diminishing Returns

The results of several input-output experiments demonstrate that an intake of TDN of about 25% in excess

(Continued on page 31)

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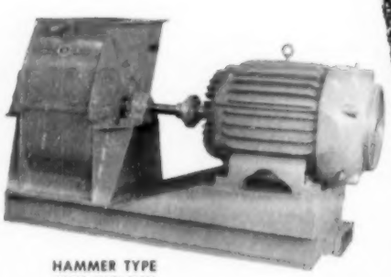

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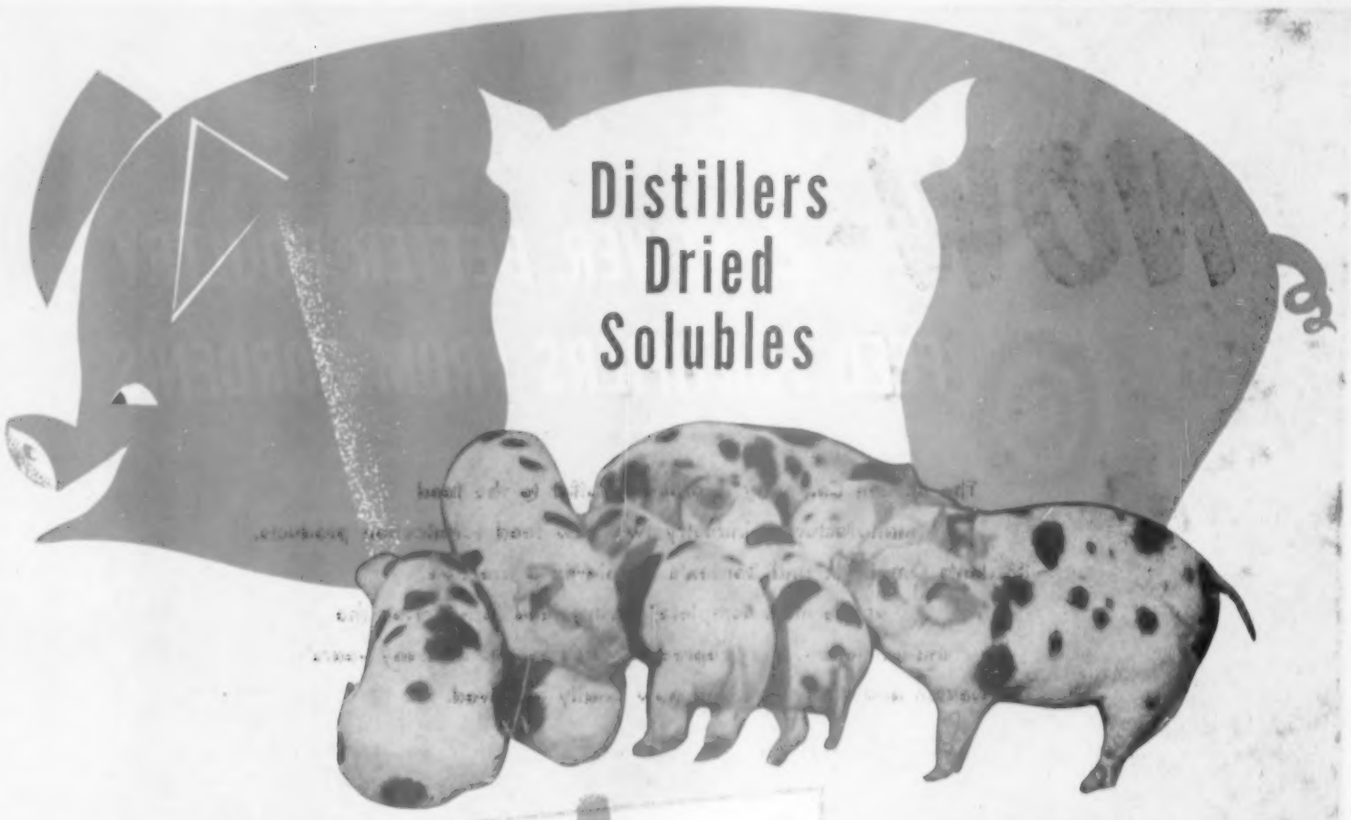

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Omni-Mix is designed especially for use in broiler feeds, chicken starters and growers and turkey starters, growers and finishers. Used at recommended levels, Omni-Mix provides an abundance of "fish factor," "whey factor" and *multiple* "fermentation factors." These latter nutrients come from Borden's *Fermacto*, an unexcelled blend of fermentation products.

You need add no fish meal to broiler formulas since Omni-Mix includes this important animal protein, together with fish solubles.

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Packed with nutritional power, Omni-Mix B contains an abundance of "fish factor" from fish meal and fish solubles, eliminating the need to add these ingredients to the breeder formula. "Whey factor" sources, such as dried whey, distillers' solubles and dried brewers yeast, can also be eliminated, since Omni-Mix B generously supplies this vital unidentified factor from Borden's whey solubles. Important, too, is the inclusion of new unidentified factors from *Fermacto*, a multiple fermentation blend recently developed in the Borden Nutritional Research Laboratory.

The nutritional pattern of Omni-Mix B is rounded out with the inclusion of vitamins A, D, E, riboflavin, niacin, pantothenic acid and B_{12}, together with manganese and butylated hydroxy toluene.

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No. 5637—Feed Additive

A 16-page technical report on the feed additive, called by the trade name, Armour Dynafac, is available through the chemical department of McKesson & Robbins, Inc. The company's announcement claims that the product is a "new chemobiotic that boosts the weight gain of ruminants 10 to 15%." McKesson acts as exclusive nationwide distributor for the feed additive. Included in the report are the results of actual field tests on poultry, swine, feeder cattle, beef and dairy calves, lambs and sheep. Other sections cover the physical properties of Dynafac, its pharmacology, mode of action, etc., plus recommended assay and labeling procedure. Secure complete details by checking No. 5637 on the coupon and mailing it to Feedstuffs.

No. 5640—Poultry Film

"Progress in Poultry" is the subject of a new 16-mm. color film (with sound), presented by Dr. Salsbury's Laboratories. Prints are available on loan to any organization or group.

The film subtitle—"The Story of the Easter Egg, the Thanksgiving Turkey, the Pickin' Chicken, and the Christmas Goose" indicates something of how the film presents a broad subject, the growth of the modern poultry industry, in an entertaining way. The film shows how improvement in breeding, nutrition, management, and disease control have contributed to the growth of the industry. Many of the most interesting scenes demonstrate actual research, production and testing methods used in the development of poultry health aids. Running time of the basic film is 17½ min. An additional segment on management of poultry, makes the total length about 30 min. For further information, check No. 5640 on the coupon and mail it to Feedstuffs.

No. 5638—Vitamin A

Chas. Pfizer & Co., Inc., has added two new potencies of vitamin A Palmitate in Gelatin to its line of feed ingredients marketed to feed manufacturers. The new products, called vitamin A Palmitate in Gelatin A-20 and A-30, contain 20,000 and 30,000 units of vitamin A Palmitate per gram, respectively. The two new products are of the same physical nature as the vitamin A Palmitate A-10 already being marketed, except for the increased potencies. The new products will be available in 100-lb. fiber drums. Secure full details by checking No. 5638 on the coupon and mailing it.

No. 5639—Stress Product

The commercial availability of a Vineland Poultry Laboratories medication, designed to overcome the effects of stress and strain on all breeds of baby chicks, pullets, layers and meat birds, has been announced. Known as "Vineland Anti-Stresss Formula," the product contains Bacitracin, one of the most potent "miracle drugs," an antibiotic that is claimed to kill or inhibit, selectively, only harmful bacteria that may interfere with a bird's digestive or metabolic processes. The formula contains a combination of key vitamins and other nutritive essentials, it was explained. Secure complete details by checking No. 5639 on the coupon and mailing it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

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No. 5634—"Instant screen change" hammer mill, Schutte Pulverizer Co., Inc.

No. 5635—Booklet, "USDA Poultry Inspection—A Consumer's Safeguard," may be secured directly from: Office of Information, (PA 299) U.S. Department of Agriculture, Washington 25, D.C.

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BUFFALO—The Maritime Milling Co. has appointed Daniel C. Kingston as a vice president, Bruce K. Conover, Jr., executive vice president, said that Mr. Kingston will also become the company's feed and grain buyer to fill the vacancy created by the retirement of George W. Beamer on Dec. 31.

Mr. Kingston has been with the Maritime organization since his graduation from Babson Institute in 1947. He served as assistant to Mr. Beamer until 1951 when he became manager of the mill at Seaford, Del.

Mr. Beamer was one of the original employees of Maritime, joining the company in 1917, three days before the first carload of feed was manufactured and shipped. During most of his association with the company he was responsible for all feed and grain buying and was widely known in the trade. In 1940 he was made a vice president. He is a past president of the Buffalo Corn Exchange and presently is a director.

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KANSAS FORMULA FEED CONFERENCE

(Continued from page 28)

of the allowances of the commonly used standards increases the production of milk by 15 to 20%. In addition, he said, these studies demonstrate that the production response to increased amounts of concentrates is less at high levels of intake than at low levels of intake. Therefore, the principle of diminishing increments operates in the conversion of feed to milk.

The force with which the principle of diminishing returns operates, he continued, is maximal when dry matter is the input unit, but is nil when net energy is the input unit. From the practical feeding viewpoint the principle of diminishing increments is real because dairy farmers deal in terms of dry matter.

A study was made of methods of intensifying the feeding level in such a way as to counteract the law of diminishing returns. Dr. Reid said: "Since early-cut forages contribute less energy to the feces than do late-cut forages, and since the digestibility (or the loss of matter and energy in the feces) of roughages (not containing grain) in general does not appear to be affected by the level of consumption, the use of early-cut roughages to intensify feed intake would appear to be a very practical means of combating the law of diminishing returns in the feeding of dairy cows. In addition to their relatively-high energy value per unit of weight, early-cut roughages are voluntarily consumed in large quantities."

The problem with this, Dr. Reid told the feed men, is that a cow is limited in the amount of energy it can get from roughage by the bulk of it. He indicated that the concentrating of this tremendous energy into something the cow can handle would be a great stride forward.

Dr. Reid also suggested that since the energy value of a given mixed ration is maximal when consumed at about a maintenance level, but declines considerably as the level of intake increases, an attempt should be made to feed cows in such a way that most of the necessary gain is attained during the dry period.

"It would appear," Dr. Reid said, "that consideration of 'gross' efficiency (which includes the energy cost of maintenance as well as that of milk production and body gains) would be more meaningful from the economic standpoint and would represent a more critical criterion for the selection of cattle than those commonly employed."

During the course of this study, he stated, an examination was made of the data obtained with cows in calorimetric experiments. This study revealed that 69.3% of the metabolizable energy provided by balanced rations above the maintenance level is used in the production of milk or 58% of it is used when it goes for body increases. "It is suggested that these values would be highly useful in the evaluation and formulation of rations for cows. Since these values are relatively constant, and the energy losses in urine and gases are readily measured, the loss of energy in the feces becomes the most significant form of loss from the standpoint of predicting the productive energy value of feeds."

Beef Production Changes

Changes in the methods of beef production were examined by Dr. L. S. Pope, animal husbandry department, Oklahoma A&M College.

"The beef cattle industry is constantly changing to meet high production costs and competition from other meat animals," he said. "Over the long pull, we can and must achieve heights of production now believed impossible, if America is to remain a nation of 'beef eaters' and the cattle industry is to maintain its place in our agricultural economy."

Dr. Pope predicted an intensification of the trend toward shorter intervals from birth to market so that production costs can be reduced.

In going over some of the problems and strides forward of the beef cattle industry, Dr. Pope broke his discussion down into several categories.

Protein—There is much information need here, he said. The spectacular results of stilbestrol have shifted the spotlight away from basic research on the processes involved in growth and fattening. It might be that protein needs are increased by the use of stilbestrol, he said.

He predicted a lot of emphasis on defining requirements. In this connection, he said that it might be that presently accepted levels of protein are too high for economical production. The maximum utilization of urea remains a big problem, especially in range supplements. Complex protein supplements may vary in importance for beef cattle. Much depends on the quality of the roughage fed, he pointed out. "With certain poor quality roughages, some advantages may be obtained from complex protein supplements."

Energy—In cow-calf production, the cost of supplemental winter feed makes up the biggest part of the yearly expense. Cutting costs by reducing the level of supplemental feed may not be economical if calf crop percentage, weaning weight, or lifetime productivity is affected. "Studies now in progress at the Oklahoma station suggest that lower levels than generally believed advisable may be profitably fed."

Preliminary results in another project with cows calving in the fall and nursing calves through the winter have also favored low levels of supplemental feed where roughage was ample, he said. Further studies with heifer calves show that low levels of winter gain as weaner calves or yearlings can be recovered rapidly on good summer pasture with little effect on

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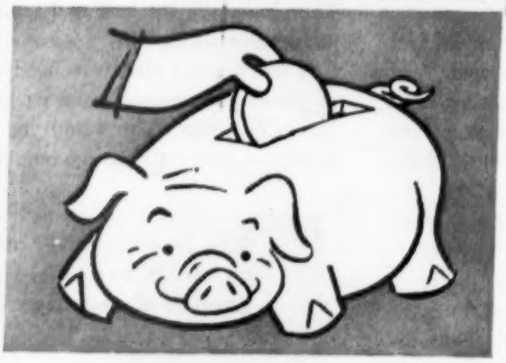

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the size of the mature beef cow, although the poorer-fed heifers may require longer to reach mature size.

Minerals—Dr. Pope called attention to the need for phosphorus in cattle rations, especially in the Southwest. A greater response in fattening cattle has been obtained from a higher level of phosphorus, he said. He predicted more emphasis on the phosphorus level.

Vitamin A—The problem of adequate vitamin A for a calving cow was discussed by Dr. Pope. He said that this problem is not as great as some people believe, in his opinion. "We have raised heifers with very little vitamin A," he said. "The problem of insufficient vitamin A comes about 8-12 weeks after the calf is dropped." The lack of sufficient vitamin A also becomes a problem, he said, after an animal has been on a fattening ration for 100 days.

Additives—Stilbestrol feeding (or implanting) has changed the beef cattle picture more than any single event in recent times, the speaker said. Significant increases in weight gain and feed efficiency are almost always achieved in the feedlot by use of the hormone-like drug. On pasture, the results vary. This may be due to the variation in pasture conditioning and the quality of the forage.

Future emphasis, Dr. Pope said, may shift to different hormone-like compounds, to combinations of hormones, or to the synergistic effects of hormones and antibiotics. "These developments will increase the complexity of cattle supplements and their cost to producers. They will also increase dependence on feed manufacturers. Likewise, they will increase the obligations of the whole feed industry to producers."

Disease and Parasite Control—There has been a great improvement here, according to Dr. Pope. He called attention to a statistic that a 2% improvement in the number of good calves dropped would improve profits 14%. He noted that dwarfism has been reduced. Progress in controlling cattle grubs was cited by the speaker.

Much interest has developed in "production testing" in cow herds, he said. "Using this technique, the poor-producing cows in the herd may be culled on the basis of weaning weight and quality of their calves. Selection of replacement heifers from high-producing cows, coupled with sound selection of bulls on demonstrated ability to gain and their dam's performance as well as shape or conformation, should improve productivity in cow-calf operations."

POULTRY—Dr. E. L. Stephenson, department of animal industry, University of Arkansas, discussed hatchability factors. He broke these factors into two main groups—those which influence hatchability by serving as nutrients for embryonic development, and those materials which improve hatchability by controlling disease-producing organisms thus producing a healthier bird.

Arkansas workers, he said, have found that the addition of fish solubles to an all-vegetable diet resulted in an increase of 15% in hatchability. Research at Texas A&M College has indicated that dehydrated alfalfa contains an unidentified hatchability factor for both chickens and turkeys. In contrast to this study, work at Arkansas suggested a response in hens from the feeding of green forage juice extracts; however, the activity was destroyed by dehydration, Dr. Stephenson said. The response in the latter mentioned case was greater during the spring months and was accompanied by an improvement in fertility.

In general, he said, most of the embryonic mortality resulting from a deficiency of the "grass juice factor" occurred during the first half of the incubation period.

Texas workers have also obtained hatchability responses in turkey eggs by feeding 5% distillers solubles. Dried whey in the amount of 3% was also fed in this study and no improvement noted, according to Dr. Stephenson.

"Butyl fermentation solubles and a fermentation residue (Vigofac) have been fed to hens at the University of Arkansas. Responses in hatchability were small when either was fed individually, but when fed together a statistically significant response was obtained. The study has been repeated with similar results," Dr. Stephenson said.

Turning to the other factors, Dr. Stephenson noted that numerous antibiotics have been fed at various levels and the results have varied greatly between experiment stations. "It seems reasonable," he continued, "to assume that the response from such materials depend on the microbial inhabitants of the environment. Thus, we can explain at least in part the response obtained by the Texas A&M College group and lack of response reported by Washington State College investigators.

"At the University of Arkansas, no benefit was noted when high levels of various antibiotics were fed to hens. A statistically significant response was obtained when furazolidone was fed at a level of 50 grams per ton. In this study, certain breeds appeared to be more responsive than others with a University of Arkansas strain of White Wyandottes being particularly affected."

Amino Acids

Dr. Stephenson, in another talk, presented information on the use of amino acids in practical feed formulas.

"The use of amino acids in formula feeds appears promising," he said. "However, before their application can be fully exploited, more information is needed concerning (1) specific requirements, (2) various interrelationships, and (3) amino acid contents of materials now being fed. There is an excellent chance that as more is learned concerning the application of amino acids in formula feeds, we will be able to produce swine and poultry more efficiently and with a smaller

(Continued on page 57)

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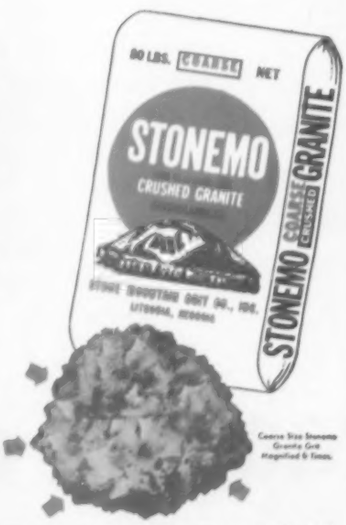

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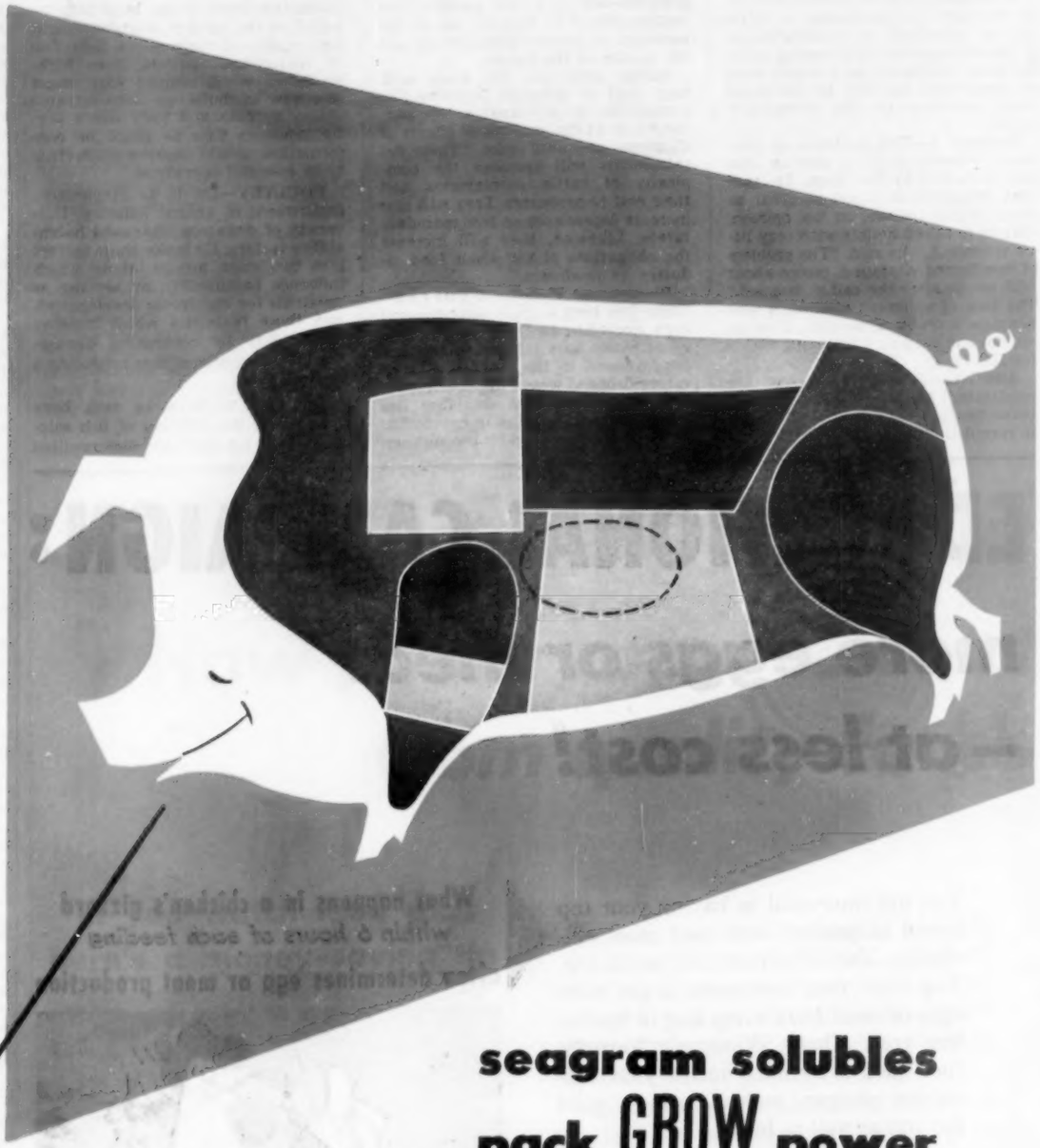

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Dr. Leroy H. Holt

JOINS PFIZER—Dr. Leroy H. Holt has joined the staff in the development department of the agricultural research and development center operated by Chas. Pfizer & Co., Inc., at Terre Haute, Ind. Dr. Holt's duties will be as abstractor, reviewing reports and other scientific material and condensing them into readily usable form. Most recently he was an instructor at Adrian, Minn. Prior to that he was a research fellow at the University of Minnesota where he received his doctorate in animal husbandry in 1953. He received his B.S. degree from Iowa State College and his M.S. from South Dakota State College, both in animal husbandry.

No Soybean Nematode In Michigan Yet

EAST LANSING, MICH. — The soybean nematode, menacing the east coast soybean crop, has not appeared in Michigan yet, but Michigan farmers are warned to know the symptoms. John Knierim, Michigan State University entomologist, urges farmers to watch next season for a yellowing of the plant and dwarfing.

Mr. Knierim points out it is difficult to check the spread of the soybean nematode, which appeared first in North Carolina in 1954. He points out that anything that will pick up dirt, such as a man's shoes, can spread the tiny organisms, or they can be blown by the wind.

The soybean industry, reports Mr. Knierim, is pinning its hopes on fumigation and on resistant strains of soybeans.

Dow President Sees High Output in 1957

MIDLAND, MICH. — The business outlook for 1957, in the opinion of Dr. Leland I. Doan, president of the Dow Chemical Co., is typified by high employment, high levels of production and intense competition with some flattening of the economic growth curve.

In an annual year-end statement the Dow executive noted that many forces would be at work opposing each other strongly. "Disposable income will undoubtedly be higher than ever," he said. "On the contrary, governmental credit policies are likely to have a restraining influence on mortgage and installment buying."

Prices, on the average, Mr. Doan feels, will hold abouf even or edge up slightly. Industry in general is feeling a profit squeeze as a result of increased costs, but the keenness of competition will tend to prevent other than selective price raises.

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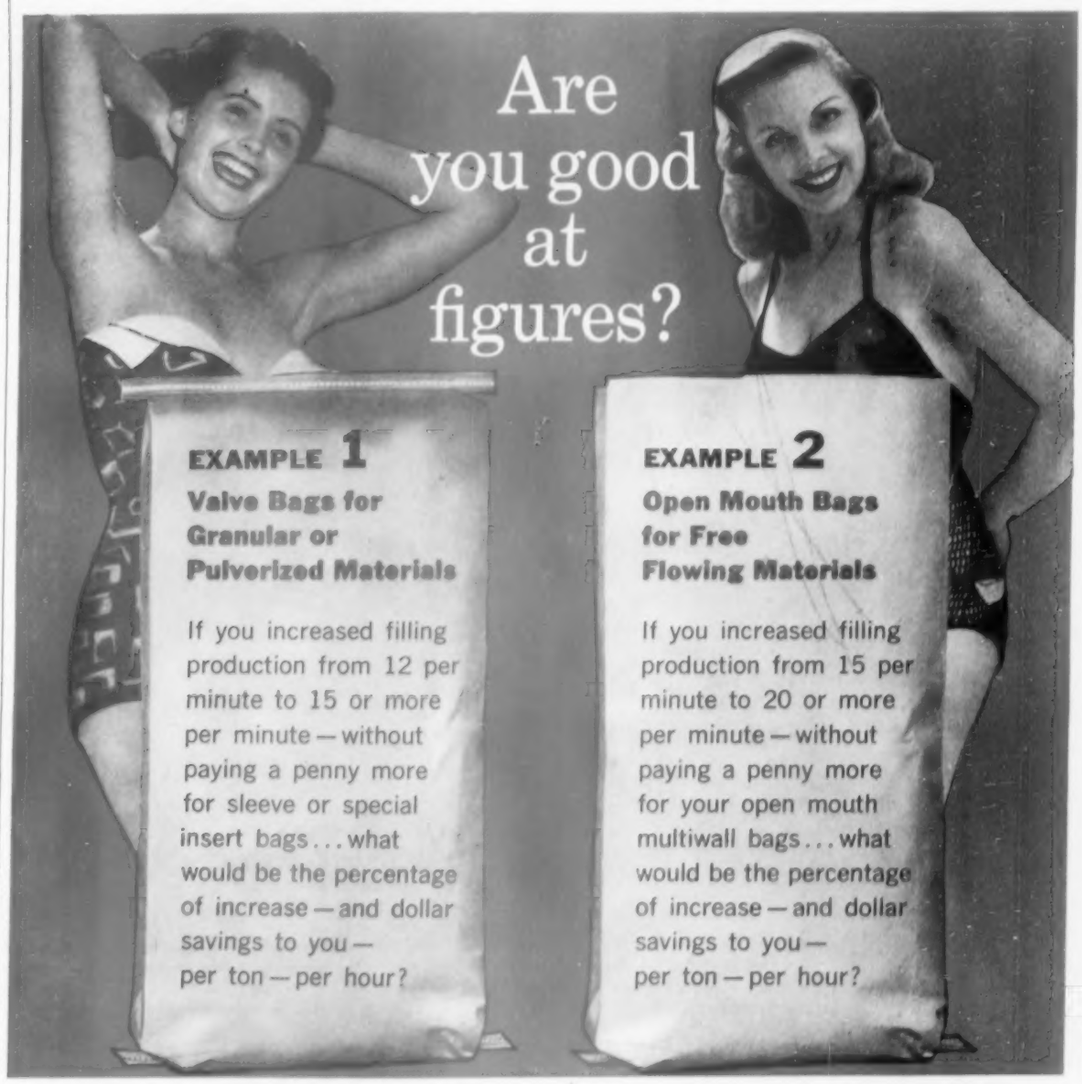
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One of Agri-Tech's primary objectives is the development of new markets for dehydrated alfalfa. Typical of this is its development of Stimulac—a lactation stimulant for dairy animals containing the hormone thyroprotein in a carrier of dehydrated alfalfa. Stimulac promises a revolution in dairy feeding by increasing average milk production 20 to 25 percent when fed as recommended . . . another product of alfalfa, pioneered by Agri-Tech.

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★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Dehydrated Alfalfa Meal Output Down; Bullish Trend Seen

KANSAS CITY—A bullish dehydrated alfalfa meal market is indicated from an analysis of production and disappearance figures compiled by the U.S. Department of Agriculture, along with other factors.

For the first seven months of the current alfalfa year (May through November), USDA reports that dehydrated alfalfa production totaled 905,300 tons. This is 205,300 tons less than the 1,110,600 tons produced in the same period a year earlier and 9,920 tons less than the five-year average. (See Table 1 on page 35a.)

Disappearance during this same period in the 1956-57 year totaled 716,200 tons. This is 53,300 tons less than a year earlier, but 45,680 tons more than the five-year average for

(Continued on page 35a)

Editorial

Continuing Progress

WE like the tradition we established many years ago of giving emphasis to the alfalfa dehydrating industry in the issue of Feedstuffs just prior to the annual meeting of the Alfalfa Dehydrators Assn.

We believe we have helped to make feed manufacturers more conscious of the remarkable nutritive values of dehydrated alfalfa, and of the equally remarkable developments in the production, processing and sale of that product. We believe also that the attention we have given the subject has been a factor in furthering the progress of the alfalfa processing techniques, and particularly in consolidating the "industry attitude," so to speak, of the very fine people who have been engaged in making a constantly improved feed ingredient available to feed manufacturers.

The dehydrators have recognized their responsibility for constant study and improvement of their product. Important developments in these studies and in these improvements have occurred in every one of the 15 years since the ADA was organized. As a result, feed manufacturers—and feeders—are being delivered values today that in some cases are greater and in some cases are simply better understood, than would have been possible without the unusual cooperative effort displayed by the industry and its friends.

Important progress is being made currently in storage and handling methods. It is a certainty that the problem of carotene loss in storage will be solved, and that year around availability and uniformity of dehydrated alfalfa will be achieved.

Topics Announced For ADA Meeting On. Jan. 31-Feb. 2

EDGEWATER PARK, MISS.—The American Dehydrators Assn. has arranged a program designed to bring its members up-to-date on alfalfa research, the use of dehydrated alfalfa meal in beef cattle and poultry rations, brokerage relationships, better selling and plans for the future.

The group's annual meeting will be at the Edgewater Gulf Hotel, Edgewater Park, Miss., on Jan. 31 through Feb. 2. Directors and the Research Council will meet on Jan. 30.

Kenneth Morrison, Morrison & Quirk, Hastings, Neb., will call the sessions to order as president of the group. Joseph Chrisman, ADA executive vice president, will summarize activities and outline association plans for the future.

Social activities will not be for-

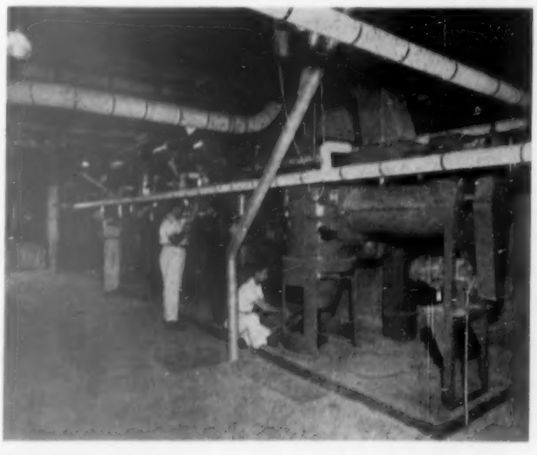
(Continued on page 34a)

Alfalfa Dehydrators Move Forward—Three Ways

Continuing a steady program of industry progress, alfalfa dehydrators continue to move forward in service to the feed manufacturing industry. These improvements are primarily on three fronts—in product research, in quality of product and in convenience and service to customers, as illustrated in the pictures below.

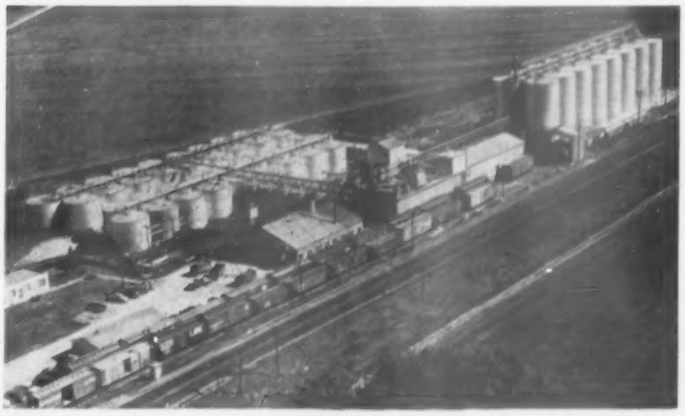
In Product Quality

Facing one of the most difficult of all such problems in the feed industry, alfalfa dehydrators have steadily and successfully sought better ways to preserve the inherent qualities of their product. Through better harvesting methods, storage conditions and product additives, they have sought to make major nutritional factors more completely available to their customers. Latest development in this unceasing search is the construction of more than 300,000 tons of inert gas storage facilities in the past few years.



In Research Program

Continuing a program begun nearly 10 years ago the alfalfa industry, through the American Dehydrators Assn., has built a vigorous program of research. Through its Alfalfa Research Council, ADA has encouraged, supported and sponsored practical research applying to the production and use of dehydrated alfalfa. This program is continuing actively in the year ahead.



In Service To Customers

The production of a higher quality and a more easily handled product has been, and continues to be, the constant aim of the alfalfa dehydrating industry. With this goal in mind, the industry has developed dehydrated alfalfa products ideal for today's high-powered formula feeds. Through pelleting, granulating and oiling the dehydrator continues to make his products easier for the feed manufacturer to handle in his modern feed plant.

SPECIAL ALFALFA SECTION

Reports on Current Alfalfa Research

EDITOR'S NOTE: During the past 30 years much has been learned about the nutritional values of alfalfa and dehydrated alfalfa has become one of the basic essential ingredients in many nutritious rations for farm animals.

One of the basic aims of the American Dehydrators Assn. is to learn more about the merits and new uses for the product they produce. To help guide the association in this program an Alfalfa Research Council was formed some years ago. It is composed of scientifically trained men from agricultural experiment stations and industry. The purpose of the council is to advise the association on research, scientific and technical questions applying to dehydrated alfalfa.

Under the guidance of the council, ADA has for several years been sponsoring research at agricultural experiment stations with grants-in-aid. During the past year such sponsored research has been underway at seven different stations. Following is a summary of the work being done at the stations at California, Cornell, Illinois, Kansas State, Connecticut, Nebraska and Washington.

Reports on the final results of the work undertaken are not yet complete in several instances and a description of the project is all that is currently available. In other cases, some indication of the progress of the work can be given. The detailed reports follow:

Nebraska

PROJECT: Soil Fertility in Relation to the Production of Alfalfa for Dehydration.

LEADER: R. C. Lipps, assistant in agronomy; R. L. Fox, assistant agronomist, and H. F. Rhoades, professor of agronomy.

PLACE: University of Nebraska, Lincoln, Nebraska.

ADA-supported research at Nebraska has been directed toward two major objectives. First, experiments were established to find ways of improving the yield, mineral and vitamin content of the alfalfa forage grown for dehydration. Results obtained in important dehydration areas indicate that yields can be materially increased with phosphate fertilizer on infertile or calcareous soils, while the phosphorus content of the forage can be nearly doubled on deep fertile soils without concomitant increase in yield. Sulfur in combination with phosphorus on some sandy low organic matter soils improved protein yields considerably and increased vitamin A content by more than 25%. No material benefit was received from broadcast potassium fertilizer or from nitrogen solutions sprayed on the alfalfa foliage.

A second objective was the characterization of the total soil environment presented to the subirrigated alfalfa plant together with the establishment of basic relationships between environment and water and mineral absorption. The following progress has been made on this objective.

Numerous alfalfa root systems have been removed from different soil types and correlated with soil properties. The distribution of alfalfa roots gave needed information on areas of root activity and did much to explain the variable growth habit of many Platte Valley fields being harvested for dehydration. An index of the extent and activity of root systems was also obtained by a comparison of the phosphorus status of soils with and without long histories of alfalfa. The long-time production of mineral rich alfalfa has caused a statistically significant reduction in total and available phosphorus to a depth of three feet and, in some instances, to a depth of 10 ft.

In order to obtain a more critical assessment of mineral absorption, two methods of characterizing root activity have been developed. One method uses P^{32} and the other nonradioactive strontium as tracer materials. The P^{32} method has been used to determine the root activity of the alfalfa plants and has been related to soil moisture, soil temperature, oxygen content of the soil atmosphere, water table fluctuations, and rainfall.

SPECIAL ALFALFA REPORT

Connecticut

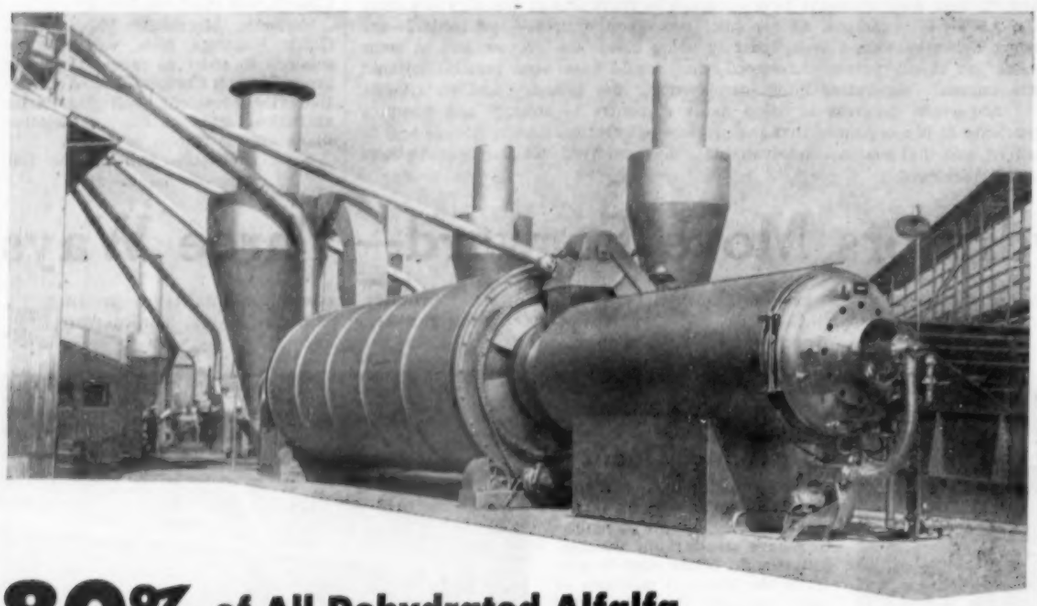
PROJECT: Utilization of Artificially Dehydrated Alfalfa as a Feed for Dairy Cattle.

LEADERS: H. D. Eaton, professor of animal nutrition, and J. E. Rousseau, Jr., instructor of animal nutrition.

PLACE: Storrs (Conn.) Agricultural Experiment Station.

Artificially dehydrated alfalfa is widely used in ruminant rations as a source of carotene, pro-vitamin A. The amount of carotene necessary in the ruminant's diet is considerably less following a good pasture season than following a poor pasture season, since high carotene intakes give correspondingly high body stores of vitamin A from which the animal can draw during the subsequent barn feeding period. In the case of the dairy calf, the vitamin A status is dependent upon the dam's previous carotene intake as well as the carotene content of the feeds fed the calf itself. To provide information for efficient and optimum utilization of artificially dehydrated alfalfa in calf rations, it is necessary to know the quantitative response of dairy calves to different levels of carotene intake from alfalfa as affected by different initial storage levels of vitamin A. The present study was therefore undertaken to ascertain quantitatively the contribution of various initial vitamin A stores of the calf to the subsequent utilization of graded levels of carotene intake from artificially dehydrated alfalfa.

Thirty-six male Holstein calves were raised to 63 days of age on a standard limited whole milk, limited starter and ad libitum roughage regime. Thereafter each calf was fed a vitamin A depletion ration until the blood plasma vitamin decreased



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to less than 10 mcg. per 100 milliliters, a vitamin A status bordering on deficiency. To provide widely different vitamin A storage levels, each calf was then fed for a six week period, one of three carotene intakes 100, 300 or 900 mcg. lb. of live weight per day from artificially dehydrated alfalfa. At the completion of this preliminary period, calves in each initial carotene intake group were subsequently fed for a 12-week period one of four carotene intakes 20, 60, 180 or 540 mcg. per lb. of live weight per day from artificially dehydrated alfalfa. Upon completion of this period, the calves were slaughtered for the purpose of determining vitamin A storage.

Preliminary analyses of the data for plasma and liver vitamin A concentration indicate the importance of higher carotene intakes during the winter feeding period following drouth or poor pasture conditions and the rapid decrease in body stores of vitamin A when intake of carotene is inadequate, such as under conditions of poor roughage feeding. Concomitant measurements of plasma and liver tocopherol concentrations indicate that artificially dehydrated alfalfa contributes significantly to the tocopherol status of the calf.

Kansas

PROJECT: Study of the Marketing of Dehydrated Alfalfa and Other Economic Aspects of the Dehydrating Industry.

LEADER: Leonard Schruben, professor of agricultural economics and grain marketing.

PLACE: Kansas State College.

Kansas State College is investigating the marketing and other economic aspects of the dehydrated alfalfa industry. The assembly of information to date includes:

1. A mail survey of all known dehydrating plants with respect to the organization, capacity, production, sales outlets and storage facilities.

2. A mail survey of members of the Nutrition Council, American Feed Mfrs. Assn. The information received pertained to the relative essentiality of dehydrated alfalfa in various feeds for different classes of livestock.

3. A mail survey of members of the Nutrition Council obtaining information on what would be used as a substitute for dehydrated alfalfa. This questionnaire also obtained information on the price at which substitution would take place and the price at which more extensive use of dehydrated alfalfa would be made.

4. Interviews of a sample of dehydrators (69) throughout the U.S. Detailed information was obtained on production, capacity, procurement of raw material, ownership status of alfalfa acreage, harvesting and processing equipment, fuel use, employment, storage facilities and policies, shipments, sales outlets or channels, quality control, sales organization and pricing policies. Schedules were filled out.

5. Interviews with a representative group of middlemen which provided information on functions, channels, volume and margins. Detailed schedules were filled out.

6. Analysis of trends in production, prices and use of dehydrated alfalfa and leading products used for livestock feed.

7. Literature review on animal nutrition, especially that relating to the use of dehydrated alfalfa. Animal feeding experiments have been collected which are being used as a basis for economic evaluation, and to appraise the potential utilization of dehydrated alfalfa in livestock feeds.

8. Feedlot studies involving feeder acceptance of the product.

9. A review of literature designed to assemble information on potential uses of dehydrated alfalfa for uses other than in livestock feeding.

10. Incidental to the assembly of other data, material has been gathered on processing, handling, storing, grades and standards and miscellaneous items, including a relatively extensive bibliography.

Several reports and articles have been published utilizing some of the data gathered. An extensive report is expected to be finished and published within a short time.

Washington

PROJECT: Dehydrated Alfalfa as a Supplement to Wheat Straw for Wintering Pregnant Beef Heifers.

LEADER: I. A. Dyer.

PLACE: State College of Washington, Pullman, Wash.

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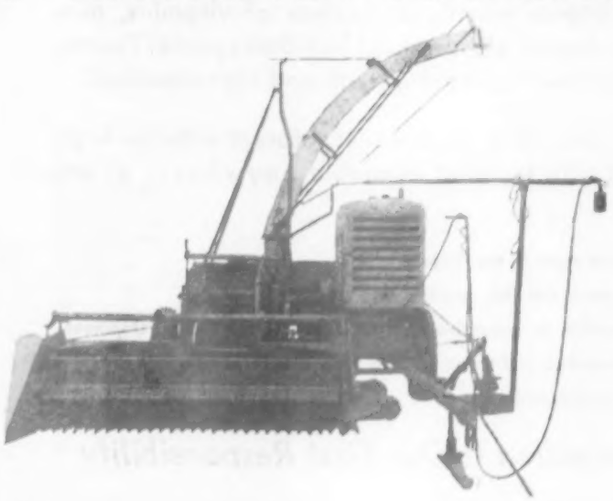

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hay long has been the standard wintering roughage for beef cattle. Because of drouths and/or short growing seasons, alfalfa hay is sometimes scarce and expensive. During such winters it is necessary to partially substitute another roughage for alfalfa. The roughage most available for use year after year is wheat straw. Chemical analyses of this roughage show it to be high in lignin, and low in carotene, minerals, protein, and net energy. Yet, when properly supplemented, it can be utilized efficiently by ruminants.

In order to determine the supplementary effects of dehydrated alfalfa meal, alfalfa ash and urea on wheat straw utilization, 45 pregnant Hereford heifers were divided into nine groups of five each. Heifers in group 1 consumed alfalfa hay at will during the morning and evening feedings plus a limited amount of basal mix consisting of wheat, salt, and bonemeal. Those in group 2 consumed wheat straw instead of alfalfa plus the same amount of the basal mix. The other seven groups received wheat straw plus the basal mix, and were supplemented as follows: (3) dehydrated alfalfa, (4) alfalfa ash, (5) dehydrated alfalfa and alfalfa ash, (6) urea, (7) dehydrated alfalfa and urea, (8) alfalfa ash and urea, (9) dehydrated alfalfa, alfalfa ash and urea. Molasses was added to all of the roughages as 10 per cent of the total ration. The heifers received the experimental rations until their calves were 2 weeks of age (approximately 207 days). Heifers were fed individually and had access to feed for a 3-hour period each morning and evening.

Animals supplemented daily with 2 lb. of dehydrated alfalfa increased in body weight significantly faster than comparable heifers without alfalfa, during the 180 day pre-partum experimental period. Likewise, heifers supplemented with urea gained significantly faster than unsupplemented animals. Blood and liver vitamin A levels were determined at various intervals throughout this 180-day period, and it was found that dehydrated alfalfa significantly reduced the depletion rate of vitamin A stores in the liver, but had no significant effect on plasma levels. Some of the heifers receiving wheat straw without carotene supplementation developed a rough hair coat during the latter part of the experiment. This could indicate a mild vitamin A deficiency, however, no other visible symptoms indicative of a vitamin A deficiency were observed.

It is interesting to note there were no significant differences among the birth weights of calves whose dams were receiving the wheat straw rations with various supplements. However, calves sucking dams supplemented with dehydrated alfalfa were significantly heavier at two weeks of age. This might be explained in that feed consumption, and consequently the energy intake, was increased in the dehydrated alfalfa-fed groups. However, it is possible that dehydrated alfalfa either stimulated milk production in the dams, or possibly was responsible for a better balanced supply of nutrients to the calves via their dams. Results of digestion trials showed that dehydrated alfalfa reduced crude fiber digestion; however, when fed in a combination with alfalfa ash, crude fiber digestion was significantly increased.

After summarizing the results of this experiment it appears that wheat straw, when properly supplemented, can be satisfactorily used as a source of roughage for maintaining pregnant beef heifers.

Illinois

PROJECT: Unidentified Growth Factors in Alfalfa.

LEADERS: R. G. Hansen, Dairy Science Department, and H. M. Scott, Animal Science Department.

PLACE: University of Illinois, Urbana.

Studies have been underway at Illinois for a number of years looking toward further clarification or explanation of the varying growth effects obtained when alfalfa meal is fed to chicks.

Several phases of the problem have been studied over the past four years, during which ADA has lent its support to the project.

One approach has been the partial fractionation, first through best possible separation of the protein and feeding of the protein and residue to chicks and later by more drastic treatment through chemical means and subsequent feeding of the fractions obtained.

Fundamental to the success of such experimentation is the formulation of a purified test ration for comparative purposes. Such purified diets, complete in all known nutrients required by the chick, did not support maximum growth and supplementing such basal diets with crude sources of unidentified factors resulted in chick growth that exceeded that which could be obtained on a good practical diet. An alfalfa response could be superimposed on top of the response from whey, liver, etc., and therefore justified the attempts to identify the alfalfa factor(s).

A later approach involved the study of various samples of alfalfa differing in their physiological stage of growth in some instances, differing in date of harvest in others, and in both instances differing in amount of water made available to the growing plant by means of irrigation. These experiments are still in progress, so that final results are not at present available.

It is evident from a preliminary analysis of the data that the chicks grew exceedingly well on the basal diet. Nevertheless, supplementing the basal diet with 10% alfalfa meal consistently improved chick growth without any adverse effect in feed conversion. There is some suggestion that the first cutting was superior to later cuttings in stimulating growth. It is apparent also that for a given cutting, alfalfa harvested from irrigated and non-irrigated plots could well be considered as having originated from the same plot.

While the addition of 30% alfalfa to the basal diet depressed growth in each instance, it is evident that chicks fed the fourth cutting tolerated this high level of alfalfa exceedingly well. There is some suggestion also that the first cutting was tolerated better than the second and third. These observations tend to support the view previously expressed, that the alfalfa plant varies more in the growth in-

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hibiting factor than in the growth stimulating factor.

The results of the present test would suggest that factors are operating during the growing season which influence the nutritional properties of the alfalfa plant as measured by chick assays.

Cornell

PROJECT: Studies of the Energy Value of Alfalfa Products for Poultry.

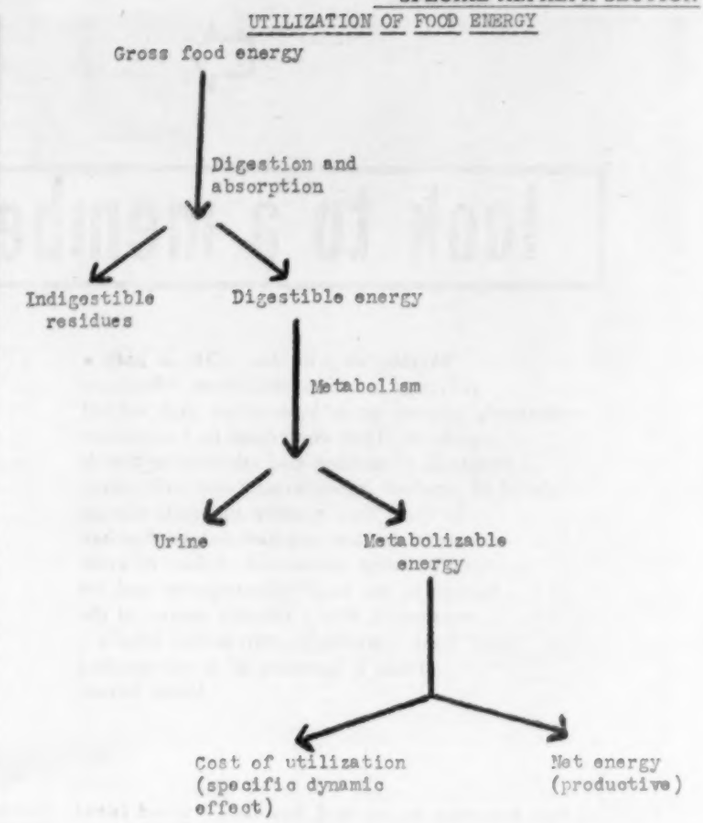
LEADER: F. W. Hill.

PLACE: Cornell University, Ithaca, N.Y.

The purpose of this recently initiated project is to determine the metabolizable energy values of alfalfa products for poultry. It is a part of an extensive program of studies in energy nutrition at this laboratory which includes determination of the energy values of a wide variety of practical feedstuffs and purified nutrients, and investigations of energy utilization by chicks and hens.

The objectives of this project are (1) to determine the metabolizable energy content of representative alfalfa meals as an appraisal of materials presently available for commercial use; (2) to study the relation of level of feeding of alfalfa and alfalfa constituents to energy value, in order to determine effects on energy utilization which may not be apparent from other criteria; and (3) to study the influence of chemical composition, stage of maturity, and source on energy value.

Studies in energy nutrition of poultry are of great current interest from practical as well as fundamental standpoints. The three alternatives for measurement of energy values of feedstuffs are digestible, metabolizable and net (productive) energy; their relation to each other and to the gross energy of food is indicated in the accompanying diagram.



Of the three energy measures which can be used, net energy is theoretically the most desirable. However, its determination is cumbersome and difficult and, as found in recent Cornell studies, subject to a high degree of variability. In contrast, the determination of metabolizable energy is relatively simple and has a high degree of precision.

Reproducibility, though much to be desired in any measure of nutritive value, is not sufficient justification in itself for choosing metabolizable energy in preference to net energy. The usefulness of the information obtained is the most important consideration. Recent Cornell studies of the utility of metabolizable energy as a measure of energy intake have shown that it is directly related to the utilization of energy by the growing chick over a wide range of feed intake and with greatly differing dietary nutrient proportions. Data presently available indicate that metabolizable energy is an adequate measure of energy input in studies of energy utilization, and is as useful as any more complex measure for both practical and fundamental uses.

Ultimately, accurate metabolizable energy values for all common feedstuffs will be available for use by nutritionists. Alfalfa products are an example of materials which potentially range widely in composition. Accurate knowledge of the energy values of alfalfa products over the

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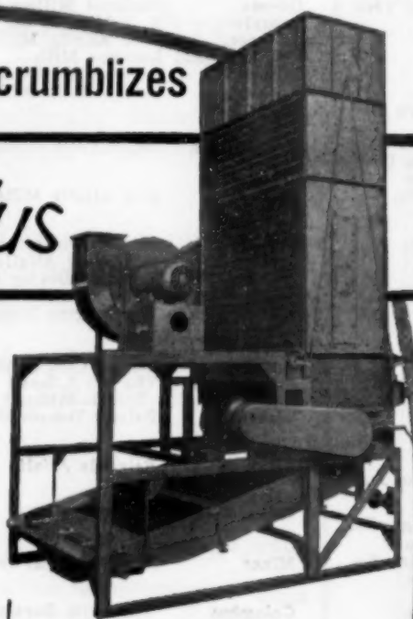

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entire range of composition and characteristics which can be encountered in the practice is necessary for their intelligent use. This is the major objective of the project.

California

PROJECT: Increasing the Nutritive Value and Palatability of Dehydrated Alfalfa and Oat Forage by Control of Fiber Content Through Manipulation of Harvesting Intervals.

LEADER: J. H. Meyer.

PLACE: University of California (Davis).

The purpose of these experiments was to determine at what stage of growth alfalfa and oat forage would produce forage high in nutrient value commensurate with maximum yields of nutrients per acre. Forages from alfalfa and oat were harvested at various stages of maturity and dehydrated and ground for use in feeding and digestion trials with sheep. Lignin was studied because it is inversely related to the total digestible nutrient content and hence energy value. Protein content was studied because of its obvious importance and needs to livestock rations.

It was found that oat forage increased in lignin content until the milk stage and then plateaued with no further increase in lignin. The

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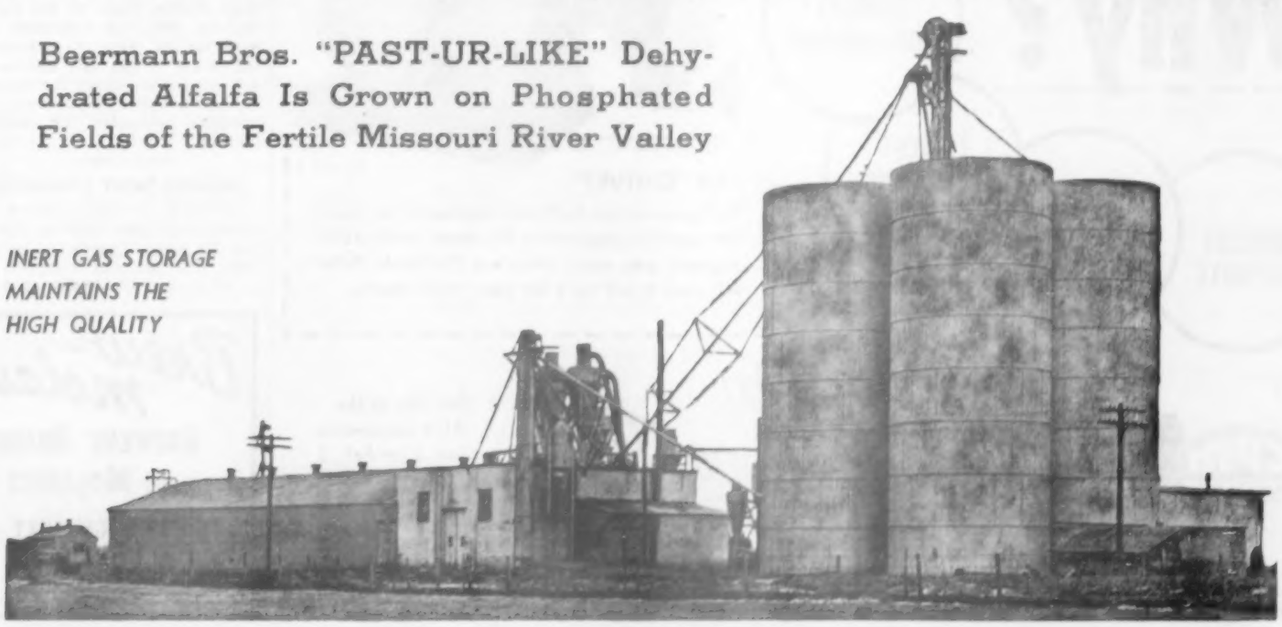
INERT GAS STORAGE MAINTAINS THE HIGH QUALITY



formation of grain caused a decrease in lignin content. The protein showed an inverse trend to that of lignin. Total digestible nutrient content and daily gains of the sheep decreased to a small extent from the jointing stage through the flower stage. Then there was a drastic decrease in feed value as measured by TDN and weight gains of lambs. Apparently the milk stage of oats has the lowest quality. Formation of grain in the dough stage increased the quality of the forage. Actual yield data indicated that dry matter production was at a maximum in the milk stage and increased no further. However, the nutrient yield per acre as measured by TDN or lamb production indicated that the 20% flower stage was the best time to harvest oat hay as energy source for growing sheep. These were hays of the highest quality commensurate with maximum yields of nutrients per acre.

Trends of alfalfa lignin and protein were somewhat different than that in the oat forage. Lignin levels increased gradually to about 10 to 30% bloom and then plateaued. In other words, after the alfalfa had reached the bloom stage no change in lignin content occurred after this time which would indicate the quality of alfalfa in the bloom stages is relatively constant. Protein inversely followed a similar pattern. It should be pointed out that the bloom stage was determined by hand counts of the stems and any stem with a blossom was considered to be in bloom. The feeding trial data are in general agreement with the conclusions that might be made in the changes of lignin content of the alfalfa. In general, all alfalfa harvested in the bud stages is superior to the bloom stage alfalfa when alfalfa is used as energy source for growing sheep.

Maximum yields for the season were obtained from the 10% and 46% bloom alfalfa in terms of dry matter. The TDN yield was about the same for the 10% bloom and the 46% bloom alfalfa. The lamb production per acre, however, seemed to be about equal for 10% bud, 62% bud, 10% bloom and 46% bloom. However, since the greater number of fat lambs were produced from the bud alfalfa it seems that the greatest energy production was from the bud stages. But if one is interested in the production of lamb, TDN, digestible protein or dry matter per acre from one cutting, it is undoubtedly true that the greatest production would be from the half-bloom alfalfa. Certainly, nothing was gained by letting alfalfa go to the full-bloom stage.

In all experiments, the pelleting of alfalfa increased average daily gain and increased efficiency of utilization when compared to alfalfa fed as chopped hay. Lambs on the pelleted alfalfa consumed more dry matter per day than did the lambs on chopped alfalfa which seemed to account for much of the advantage of pelleting.

The use of pelleted dehydrated alfalfa on the range for a feed supplement primarily as a source of protein and carotene shows promise. The experiments are still in progress in which pelleted bud stage alfalfa is being compared to cottonseed meal, barley, pelleted full-bloom alfalfa and no supplement for growing range sheep.

It should be emphasized that the main studies made at the California station, with the exception of the work on the range, have been a consideration of oat and alfalfa forage as a source of energy for sheep rather than a source of carotene, protein, minerals, vitamins, or unidentified factors.

Dr. Hugo O. Graumann

PROGRESS REPORT—A report on progress in the development of new aphid-resistant varieties of alfalfa will be reviewed by Dr. Hugo O. Graumann, research agronomist, U.S. Department of Agriculture, in his talk, "What's New in Alfalfa Culture?" at the American Dehydrators Assn. meeting at Edgewater Park, Miss. Dr. Graumann served for nine years on the agronomy staff of Oklahoma A&M College before joining the Agricultural Research Service, USDA, in 1947. In the latter assignment he spent 5½ years doing alfalfa breeding work at the University of Nebraska. For the past four years he has been serving as alfalfa project leader of the forage and range section, field crops research branch, USDA, Beltsville, Md.

FOURTH MOST UNDESIRABLE

TUCSON — The spotted alfalfa aphid is number four on the list of the 10 worst insects in Arizona in 1956. The list was compiled by Dr. J. N. Roney, University of Arizona.

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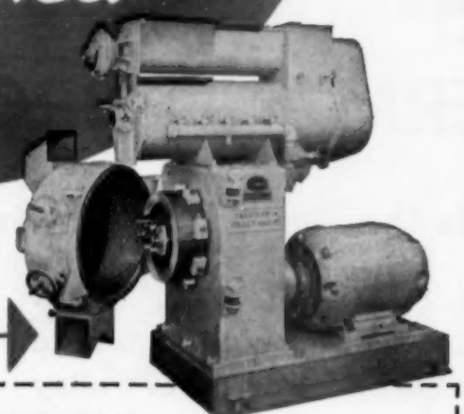

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AUBURN DEHYDRATING MILLS, INC.

AUBURN, ILLINOIS

Dehydrators Continue Rapid Expansion of Gas Storage

By Joseph Chrisman

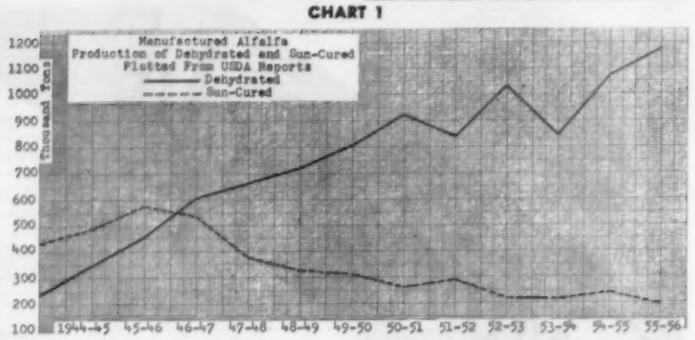
Executive Vice President, American Dehydrators Assn.

EDITOR'S NOTE: As part of a continuing effort to up-grade the quality of dehydrated alfalfa and level out the price curve, the dehydration industry is adding more inert gas storage facilities. In the accompanying article, Mr. Chrisman points out the need for this up-grading and predicts that the trend will continue. He also explains why the increase in gas storage has not leveled out the price curve as much as some anticipated. A chart shows the quantity and location of present and proposed gas storage installations.

It has been pointed out before but will bear repeating that the producers of dehydrated alfalfa meal are aggressive, keen and very forward looking in that part of their industrial management having to do with product manufacture and physical handling.

The very rapid adoption by the industry of means to preserve a good product while at the same time reducing costs, adopting methods of automation and reducing capital expenditures of such storage through physical change of the commodity is good evidence of the mechanical ingenuity and production management ability of the principals.

CHART 1



From a meager 4,000 tons of storage capacity under inert gas in 1949, the dehydrators may now boast of somewhere in the neighborhood of 270,000 tons capacity in use in the U.S. and Canada during 1956.

The books are not closed on this particular phase of expansion for it appears that in 1957 a further 40,000 tons of capacity will be constructed and possibly as much as 60,000 tons.

Table 1 gives the geographical distribution of storage under non-oxidizing atmospheres and probable expansion in the year of 1957.

The thinking behind this sky-rocketing storage plan has been of several sorts. One predominant reason might be said to be the profit motive, which after all is the primary reason for all free enterprises.

Uniform, Nutritive Product

Many dehydrators foresaw that only by being able to deliver a uniform product of as high nutritive value as was consistent with the crop being handled, and doing so throughout the 12 months of the year, could they

Joseph Chrisman

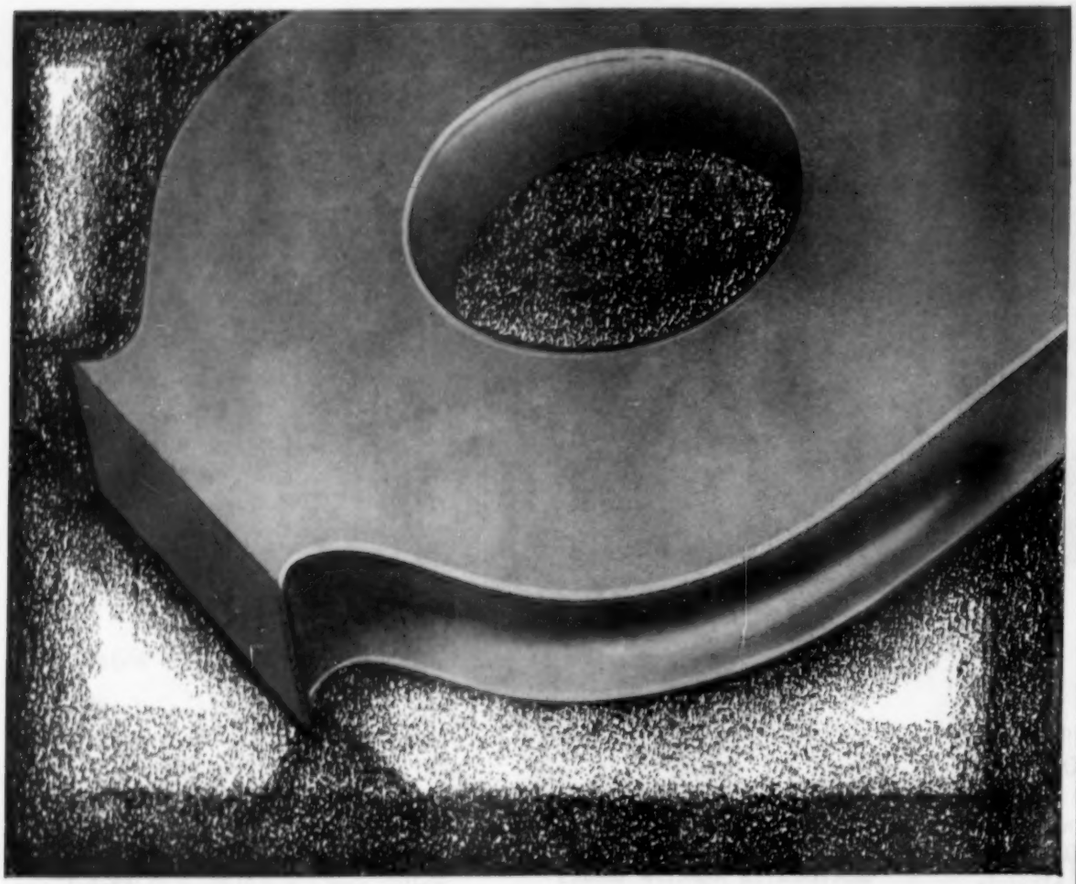


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Table 1—Inert Gas Storage for Dehydrated Alfalfa (tons)

State	In use 1956	Firm proposals for 1957	Uncertain but proposed for 1957	Possible 1957 total
Nebraska	106,000		1,000	107,000
Kansas	97,500		2,000	99,500
Colorado	16,500			16,500
Iowa	4,900			4,900
California	6,000			6,000
Missouri	3,000	3,000	2,000	8,000
Oklahoma	3,600			3,600
Illinois	400			400
Indiana	2,600		1,500	4,100
Minnesota	3,500		1,000	4,500
Ohio	13,300	18,000	4,500	35,800
Pennsylvania	3,900			3,900
Tennessee		18,000		18,000
Total	261,200	39,000	12,000	312,200
Canada	7,750		2,000	9,750

survive. Formula feed manufacturing research is constantly demanding quality and uniformity. Mill operators are asking for feed ingredients which are easy to store, to mix and to handle, with the obnoxious qualities held to a minimum.

Research sponsored by the American Dehydrators Assn., as well as a great deal of research stimulated by the ADA program, has helped the dehydrator to a realization of the feed manufacturers' needs and prodded him to greater effort to meet these needs. Through the mass of evidence presented in the past few years by many research workers, the dehydrator has become conscious of the need to preserve not only the

SPECIAL ALFALFA REPORT

valuable precursor of vitamin A (carotene), but also the need for maximum preservation of the vitamin K, the tocopherols and the xanthophyll in his product.

The dehydrator is rapidly learning that the formulator of poultry feeds has a very different problem from that of the formulator of feeds for ruminants. He is becoming aware of the fact that fiber is "duck soup" for the cow but just a nuisance to the chick. Hence we are witnessing the up-grading of the dehydrated alfalfa meal sold to poultry formulators. This is particularly noticeable on the Pacific Coast but is also evident to some extent in the Middle West and the East. It might be safe to predict that this trend will be accelerated in the years ahead. It's going to be increasingly difficult for dehydrators to stand on present laurels in the face of such rapid and radical changes as are being experienced in broiler feed formulation, for instance.

Why has not this great expansion of year-around storage of a preservative nature not leveled out the price curve? Probably the biggest single factor operating to prevent the normal functioning of the law of supply and demand which should help to make prices level out when preservation storage increases, is the fact that dehydrators have been increasing their total production year by year at a rather rapid rate as can be seen in Chart 1. Not until last year has the industry suffered a really serious setback in total production. The production for 1956 is not shown in this chart since the years shown are May through April, but total production will be down by more than 200,000 tons.

Another factor which militates against such a leveling out of prices is the continued production and marketing of a fairly good sized tonnage of the entirely unimproved product which was the industry's only commodity some five to 10 years ago.

When this product hits the market during the producing months it tends to drag down all other types with it because of a lessened demand for dry, untreated run-of-the-mill meal.

The industry is becoming ever more cognizant of the needs and desires of the buyer, and the buyers are becoming more and more discriminating as their research people and their mill superintendents tell them what they want. Model T's just can't compete with modern V-8's in spite of the fact that either may get you from here to there.

Concurrently with the expansion in storage under inert gas there has been an even greater increase in pelleting. Mills which do use gas storage have of necessity adopted pelleting as a matter of economy in handling and storage capacity, but many dehydrators have installed pellet mills simply as a means of producing a more readily marketable product. This gives them a versatility in meeting the demands of the market, whether it be directly to the feed mill, to a blender, or for use directly by the livestock feeder.

Dehydrated alfalfa is a wonderful product. The very fact that production has increased so rapidly and that the market has absorbed it is evidence of its desirability to the formula feed manufacturer and to the feeder.

There is no other feed ingredient that can boast the wide spectrum of nutritive values which dehydrated alfalfa has. It is good enough that the dehydration industry has spent somewhere between 5 and 7 million dollars just to store it in a manner to best preserve those nutritive values.

By continuing efforts to improve and protect the product, constant research to enhance its values and learn more about its growth and preservation, the dehydration industry will insure its future.

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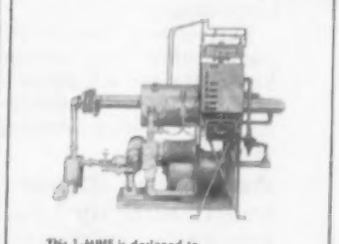
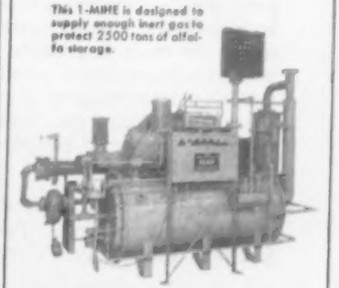


This 1-MIME is designed to supply enough inert gas to protect 2500 tons of alfalfa storage.



This 8-MIME protects up to 20,000 tons of alfalfa. One of 25 Kemp Inert Gas Generator models.

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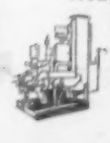

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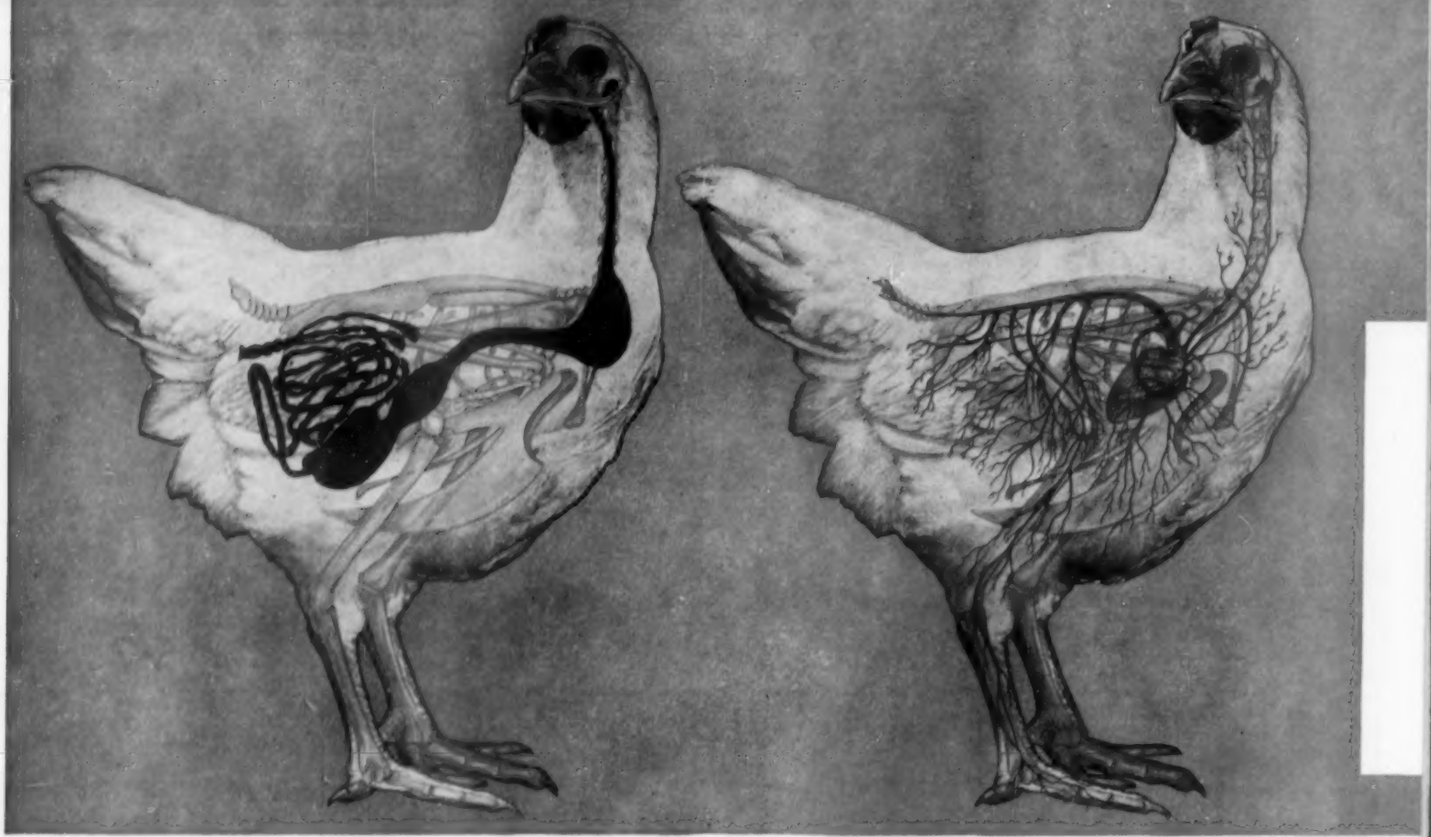

What is it? PRO-STREP is a new and superior high-level feed supplement incorporating penicillin with streptomycin. Each pound provides a combination of 5 grams of procaine penicillin and 15 grams of streptomycin sulfate.

While the U. S. patent covering the use of penicillin in feeds attests to Merck's acknowledged leadership in the nutritional use of antibiotics, Merck research is by no means resting on its laurels. In fact, PRO-STREP is objective evidence of our determination to come up with more and better antibiotic feed supplements.

PRO-STREP is recommended for mixing in feeds at the rate of five pounds per ton. It is non-toxic, compatible with other micro-ingredients, and leaves no tissue residues.

When is it used? PRO-STREP may be used to prevent or control disease in poultry and swine. Administered during and before periods of stress (vaccination, castration, hormonizing, debeaking, chilling, moving, or over-heating), it guards animals against infection. If disease does break out, PRO-STREP is an effective aid in controlling C.R.D. and non-specific enteritis in chickens, blue comb in turkeys, and "necro" in swine. PRO-STREP is also very effective for stimulating egg production in layers adversely affected by disease or extremes in the weather. Use it also to promote growth in both broilers and swine.

Why is PRO-STREP so effective? Penicillin and streptomycin each exerts specific nutritional and antibacterial actions. PRO-STREP contains effective streptomycin and rapid- and prolonged-acting penicillin (which many authorities agree is the best antibiotic for growth-promotion in poultry).

In PRO-STREP, both enhance each other's antibacterial effect through synergism—giving an effect greater than either antibiotic alone.

Furthermore, because penicillin and streptomycin in proper concentration are bactericidal and not just bacteriostatic, PRO-STREP can kill germs outright. This double-teaming action helps minimize the emergence of resistant bacteria, a development that often handicaps the usefulness of antibiotics used one at a time.

Does PRO-STREP possess "broad-spectrum" activity? Yes. Penicillin is active principally against gram-positive, and streptomycin against gram-negative bacteria. In PRO-STREP, the bacterial spectrum of each antibiotic complements the other to produce a remarkably broad range of usefulness. It is important to note that PRO-STREP is extremely effective against a wide range of the bacteria which are economically important in poultry and swine production. This gives PRO-STREP as great a range of efficacy as any other broad-spectrum antibiotic feed supplement.

What is its mode of action? Because it contains two different antibiotics, PRO-STREP offers benefits not heretofore possible. Specifically, PRO-STREP provides both a systemic action

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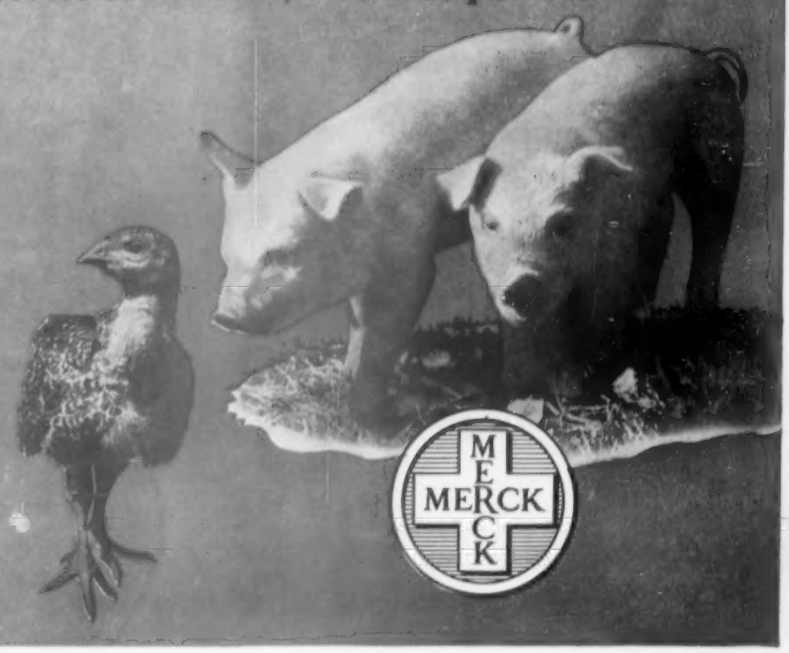

Most of the streptomycin stays in the bird's intestinal tract where it exerts a continuous action against the wide variety of gram-negative organisms found there.

Penicillin is rapidly absorbed from the intestinal tract and is carried by the blood stream to every part of the bird's body to attack most harmful gram-positive germs.

Only PRO-STREP has demonstrated in field tests the many benefits for swine, chickens and turkeys shown here.

©PRO-STREP is the Merck brand of Procaine Penicillin and Streptomycin Sulfate.

and a local action. Streptomycin, which is lethal to gram-negative bacteria, mainly remains in the intestines, where gram-negative organisms are most commonly found, and exerts a prolonged antibacterial action. Most of the penicillin, on the other hand, is quickly absorbed from the intestines and exerts its antibacterial action throughout the body. Thus you get multiple benefits from PRO-STREP—dual germ-fighting action, and dual growth-promoting action.

Who has used it? Merck has had PRO-STREP under investigation for more than two years . . . in its laboratories and experimental farm, in commercial trials and with many leading feed manufacturers. As the result of all this exhaustive testing with broilers, layers, turkeys, and swine, it is possible to state that PRO-STREP can:

1. **reduce mortality from C.R.D.**
2. **hasten recovery from C.R.D.**
3. **increase egg production under unfavorable conditions**
4. **increase hatchability**
5. **improve egg quality under unfavorable conditions**
6. **increase feed utilization for egg production**
7. **increase growth rates in chickens, turkeys, and swine**
8. **increase feed utilization for growth**
9. **cure blue comb of turkeys and nonspecific enteritis of chickens**
10. **reduce mortality from swine enteritis ("necro")**

Where can I get it? Merck ships PRO-STREP in 50-pound multiwall paper bags from Teterboro, N. J., St. Louis, Mo., and Los Angeles, Calif.

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Unknown Factors in Alfalfa For Swine and Ruminants

By Roy C. Elrod

Nutritionist, the W. J. Small Division, Archer-Daniels-Midland Co.

The subject of "unknown" or "unidentified" nutritional factor(s) has received a great deal of attention by researchers in the nutritional field and much has been written about them in the scientific literature and the popular press, at least in nutritional and feed trade publications.

The existence of certain as yet "unidentified" nutrients in a number of natural feedstuffs which stimulate an improvement in growth or reproductive performance when added to a ration complete in all known nutrients, has been well established in the field of poultry nutrition. Unidentified growth factor activity has been reported for a number of natural feedstuffs and other materials, including fish meal and fish solubles, dried whey, dehydrated alfalfa meal, liver, fermentation residues, distillers dried solubles and forage juice. It has also been found that a part of the growth-promoting activity of certain of these unidentified growth factor sources is contained in the inorganic or ash fraction. Although much remains to be discovered about the identity of these factors, it is considered essential that practical poultry rations contain at least two sources of "unidentified growth factors" for optimum performance of the ration.

In swine feeding, research on unidentified factors has not progressed as far at the present time as it has in the poultry field, but here again it has been demonstrated that at least some of the above listed sources of unidentified factors stimulate improved growth or reproductive performance when added to rations believed to be complete in all known nutrients.

Since many excellent reviews have been made of the unidentified growth factor research in poultry and swine nutrition, it seems appropriate to consider here the evidence which indicates the presence in alfalfa of unidentified factor activity which affects reproduction in swine and both growth and reproduction in ruminants, particularly beef cattle and sheep.

There are many reports in the literature to the effect that alfalfa exerts a beneficial effect on reproduction in swine. This research dates back as far as 1932, when Hogan (1) reported that increasing the level of alfalfa meal in the gestation ration for sows from 5 to 15% increased the percent of pigs weaned from 15 to 51%. Fairbanks, et al (2) reported in 1945, that control sows in two experiments weaned only 7 and 13% of their pigs, while sows fed the same ration plus either 12 or 10% of alfalfa meal weaned 83 and 82% of their pigs. Fortification of the basal diet with alfalfa meal gave better results than the addition of corn distillers dried solubles or crystalline B-vitamins (not including vitamin B_{12}).

Research workers from other institutions have reported similar results. Beeson (3) has reported that the percent of pigs weaned was increased from 40 to 84% by the addition of 15% of dehydrated alfalfa meal to a drylot gestation ration for sows which was composed of yellow corn, soybean oil meal, minerals and cod liver oil.

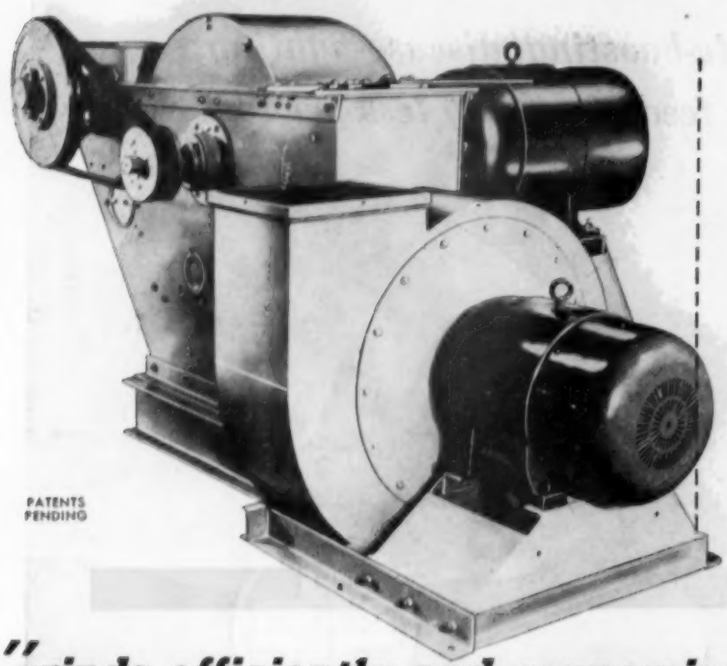
Since this research was conducted prior to the discovery of vitamin B_{12}, there seems little doubt that the dramatic responses obtained from alfalfa meal were due in part to the B-vitamins, fat soluble vitamins, and the moderate amount of vitamin B_{12} activity which is supplied by alfalfa meal. However, there is more recent evidence to indicate that alfalfa adds a factor(s) to swine gestation rations over and above its known vitamin contributions.

Gard, Terrill and Becker, (4) reported in 1955 on gestation-lactation studies in swine using a purified ration supplemented with all known nutrients including vitamin B_{12}. In three experiments, it was found that when 10% of dehydrated alfalfa meal was added to the control ration, 88% of the alfalfa-fed sows weaned litters as compared to only 55% of the sows fed the control ration.

In experiments reported by Teague, (5) it was found that gilts fed 18%

Roy C. Elrod

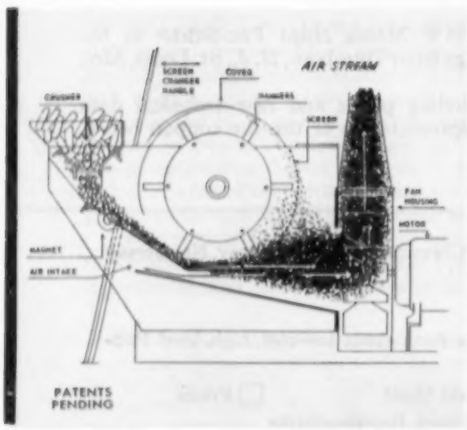
SPECIAL ALFALFA REPORT



PATENTS PENDING

L. M. McCorkle, president of the Waldo Supply Company, Waldo, Ohio says their Bryant Double-Duty hammermill

"grinds efficiently and economically day in and day out."



Above drawing shows "straight through air flow" design—an original design of the Bryant Double-Duty Hammermill.

He also wrote, "In our three years experience there has been a minimum of parts replacement, mostly worn hammers. . . . Our men would rather work around the Bryant mill because of its quiet operation compared to our other mill which runs at 3600 rpm."

You too can grind faster, better and make more profit if you use a Bryant Double-Duty Hammermill. You'll have full capacity because there is never any choking or plugging with the Bryant's original "straight through air flow" design. The feed moves through the mill in a straight line—no air power lost from pulling feed around corners.

Feed is discharged directly into the eye of the fan through a large opening (16¼" on an 18" mill) allowing full use of the air power for taking ground material away from the screen and out through the fan.

IF YOU WANT TO GRIND EFFICIENTLY AND ECONOMICALLY LIKE MR. McCORKLE — WRITE US FOR THE BRYANT DOUBLE-DUTY STORY — YOU'LL FIND OUT HOW!

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alfalfa meal in a basal ration farrowed an average of 9.83 live and 0.87 stillborn pigs as compared with 8.64 live and 0.96 stillborn from sows fed the same ration but without alfalfa meal. The examination of gilts in early gestation revealed that gilts which had received the alfalfa diet possessed a greater number of corpora lutea than the gilts fed the alfalfa-free diet. Teague concluded from these results that, "The data suggest that the diet which contained alfalfa furnished a factor or factors which favorably influenced ovluation rate and the postnatal survival of the litter, and that this factor or factors was or were absent or supplied in insufficient quantity by the legume-free diet."

Thus, it seems evident that alfalfa supplies some factor(s), as yet unknown, which exerts a definite beneficial effect upon reproduction in swine, and that practical swine gestation rations should contain at least 15% of high quality dehydrated alfalfa meal, the most practical and uniform source of the factor.

Unidentified Growth Factors for Ruminants

In general, the advances in ruminant nutrition have not been as rapid as in the fields of poultry and swine nutrition; however, in recent years the "mysteries of the rumen" have been subjected to a great amount of intense research effort and as a result, we now know a great deal more about ruminant nutrition than we did a few scant years ago. For example, we have learned that the microorganisms or "bugs" in the rumen are of vital importance in the utilization of feeds by ruminants and that for efficient performance of any ration, proper attention must be given to supplying the nutrients required by these "bugs" for their growth, reproduction, and activity. Feeding trials from several experiment stations give evidence that certain natural feedstuffs contain factors which improve the growth performance of ruminants, presumably by supplying nutrients needed by rumen microorganisms.

In 1947, Baker and associates (6) reported the addition of dehydrated alfalfa meal to a fattening ration for steers to replace a part or all of the soybean oil meal protein, increased average daily gains 8.6 to 16.8% and reduced the feed requirement per 100-lb. gain 3.2 to 7.0%. There was also an indication from this research that carcass quality was somewhat improved by the feeding of dehydrated alfalfa meal.

Steer Feeding Trials

Ohio investigators, Klosterman et al, (7) in a series of steer feeding trials reported consistent and statistically significant increases in average daily gains when either dehydrated alfalfa meal or alfalfa ash was added to a fattening ration composed of ground ear corn, soybean oil meal, poor quality hay, salt, minerals and vitamin A.

Dehydrated alfalfa has been found to be particularly effective in supplying known and unknown nutrients needed to supplement poor quality roughages for cattle. The work of Beeson et al (8) has demonstrated that poor quality roughages, such as corn cobs can be efficiently utilized by cattle if they are properly supplemented. The Purdue Supplement A formula and others like it have provided a means for the utilization of large quantities of fibrous farm by-products previously considered to be of little value as animal feed. In a series of steer feeding trials the addition of dehydrated alfalfa to the Purdue Supplement A formula resulted in consistent improvement in the utilization of low quality roughages and significant increases in the rate and economy of gain of steers. The Purdue investigators have concluded that the stimulation in rate and efficiency of gain produced by dehydrated alfalfa is due to a factor(s) other than the protein, energy, or pro-vitamin A it contains. In attempts to improve the performance of the Purdue Supplement A formula, a variety of ingredients have been incorporated into test modifications of the formula. The addition of fish solubles, vitamin B_{12}, sulfur and dried brewers yeast were found to be without effect; whereas, fish meal and active cell yeast have given a small, statistically non-significant improvement in steer performance.

At Texas A&M College, Riggs and Gossett (9) added either 1, 2 or 3 lb. of dehydrated alfalfa meal or a complex trace mineral mixture to a wintering ration for steers composed of 4 lb. ground sorghum grain, 2 lb. cottonseed meal and 8 lb. low quality prairie hay. The results of the 100-

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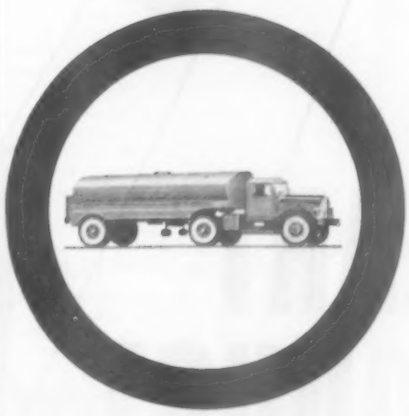

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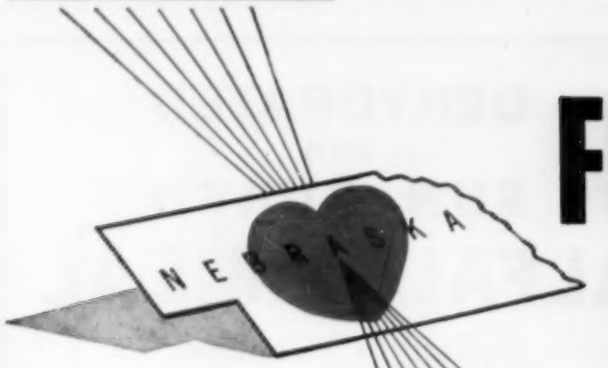

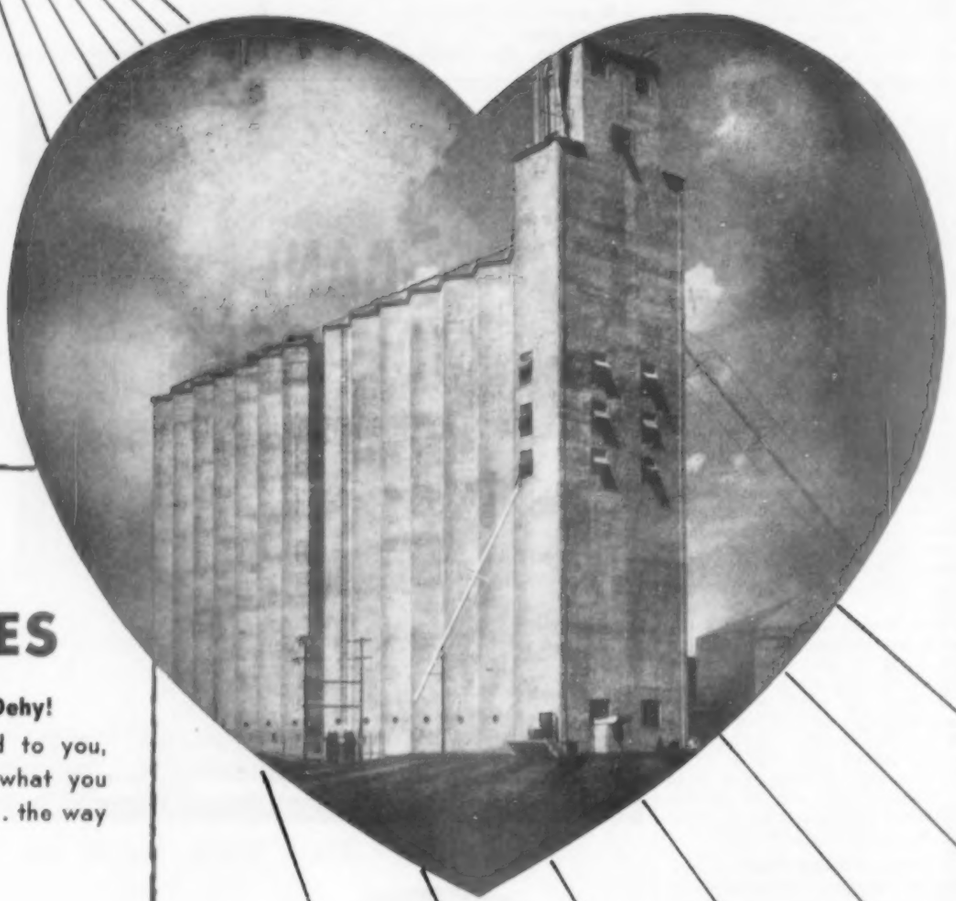

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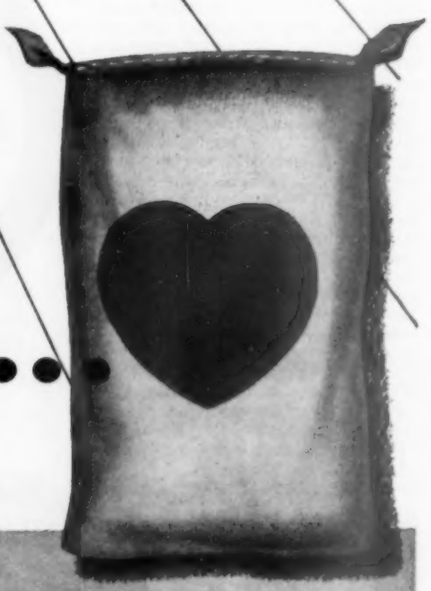

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Dehydrated Alfalfa and Trace Minerals in Wintering Ration for Steers

	Pounds dehy fed per steer daily				Trace minerals
	0	1	2	3	
Number of steers	10	10	10	10	10
Average daily gain, lb.	1.15	1.27	1.31	1.35	1.12
Total feed per 100 lb. gain, lb.	1,268	1,097	1,073	1,031	1,249
Plasma, carotene, mcg. per 100 ml.					
Initial	90	90	90	90	90
Final	55	110	144	173	57

day feeding trial with 440-lb. steer calves are shown in the accompanying table.

The feeding of dehydrated alfalfa resulted in a 15.4% average increase in gain and a decrease of 15.2% in the feed requirement per 100 lb. gain. Significant increases were also observed in the level of carotene in the blood plasma of steers fed dehydrated alfalfa meal as compared with the controls. Although blood plasma carotene levels declined in the control steers, there was no evidence of vitamin A deficiency. The lack of response to trace mineral supplementation in this experiment would seem to indicate that the response to dehydrated alfalfa meal was not due to its mineral content.

Use with Growth Stimulators

In view of the rather widespread use of cattle growth stimulators, such as synthetic hormone substances and antibiotics there may be some speculation as to whether or not a response will be obtained from feeding dehydrated alfalfa in the presence of these materials. A recent report by Matsushima et al (10) sheds some light on this question. In a fattening ration for heavy steers (approximately 980 lb. initial weight) composed of ground shelled corn, soybean oil meal, 3 lb. legume hay, 2 lb. prairie hay, and 10 mg. stilbestrol per steer daily, there was a 6% increase in average daily gain, and an increase of 6 and 4%, respectively, in the efficiency of utilization of corn and hay when a mixture of 60% dehydrated alfalfa meal and 40% soybean oil meal replaced soybean oil meal as the protein supplement. Although this study dealt primarily with stilbestrol feeding, it is of interest to note that in all comparisons, faster and more efficient daily gains were obtained when dehydrated alfalfa was included in the ration at a level of 0.75 lb. per steer daily, in combination with soybean oil meal so that the amount of supplemental protein was the same as when only soybean oil meal was fed.

Another Nebraska experiment, reported by Baker et al (11) showed that the average daily gain of yearling steers was increased from 2.36 lb. to 2.63 lb. when equal parts of dehydrated alfalfa pellets and ground alfalfa hay-molasses mixture were substituted for one half the chopped alfalfa hay in a fattening ration. Feed requirement per 100 lb. gain was decreased approximately 6%. The substitution of 1.87 lb. of dehydrated alfalfa pellets for an equal amount of chopped alfalfa hay increased average daily gains from 2.36 lb. on the control ration to 2.50 lb., or an increase of 5.9% and the feed requirement per 100-lb. gain was reduced 3.3%.

Gains in Lambs

The results of research at several experiment stations shows that, as in beef cattle, dehydrated alfalfa promotes faster and cheaper gains in fattening lambs. A report from the Colorado experiment station (12) is typical of the results obtained with dehydrated alfalfa in lamb feeding. The addition of 0.5 lb. per day of dehydrated alfalfa pellets to a lamb ration of corn silage and soybean oil meal fed during the first 70 days of a 114-day feeding trial, increased average daily gains from 0.28 lb. to 0.37 lb., or a 32% increase. This advantage was maintained by the lambs fed dehydrated alfalfa pellets through a final 44-day finishing period, during which all lots were fed a pelleted ration of equal parts corn and alfalfa hay. Feed cost per 100 lb. gain was reduced from $17.93, for the control lambs, to $14.90, for the lambs fed dehydrated alfalfa pellets for the first 70 days of the experiment.

In view of these numerous reports showing improvement in rate and efficiency of gain when dehydrated alfalfa is included in the ration for beef cattle and sheep, it appears that dehydrated alfalfa contributes a factor or factors which either is not present in commonly used feedstuffs or is not present in sufficient amounts to give optimum growth and fattening performance.

In addition to its beneficial effects in growing and fattening rations, dehydrated alfalfa has also been reported to exert a favorable effect on the reproductive performance of beef cows (Colorado and New Mexico research) and of ewes (Purdue and Montana experiments). The rather extensive studies with the feeding of dehydrated alfalfa to dairy cattle and calves conducted at the Connecticut experiment station have clearly demonstrated the value of dehydrated alfalfa in increasing milk production and in promoting improved growth and Vitamin A nutrition in young dairy calves.

Although dehydrated alfalfa has traditionally been utilized as a vitamin source for poultry and swine feeds, it also appears to be an excellent source of both known and unknown nutrients for the fortification of ruminant feeds, to help insure maximum performance of such feeds under a wide variety of practical feeding conditions.

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Lilly

REPORT TO THE FEED INDUSTRY

"...my gains on 'Stilbosol' feeds are 4 cents per pound cheaper...

. . . That's the difference between profit and loss these days!" reports Henry Tietjens, Bryant, Iowa, whose story will be read by cattle feeders throughout the country in Lilly advertisements carried by 20 farm magazines and newspapers.

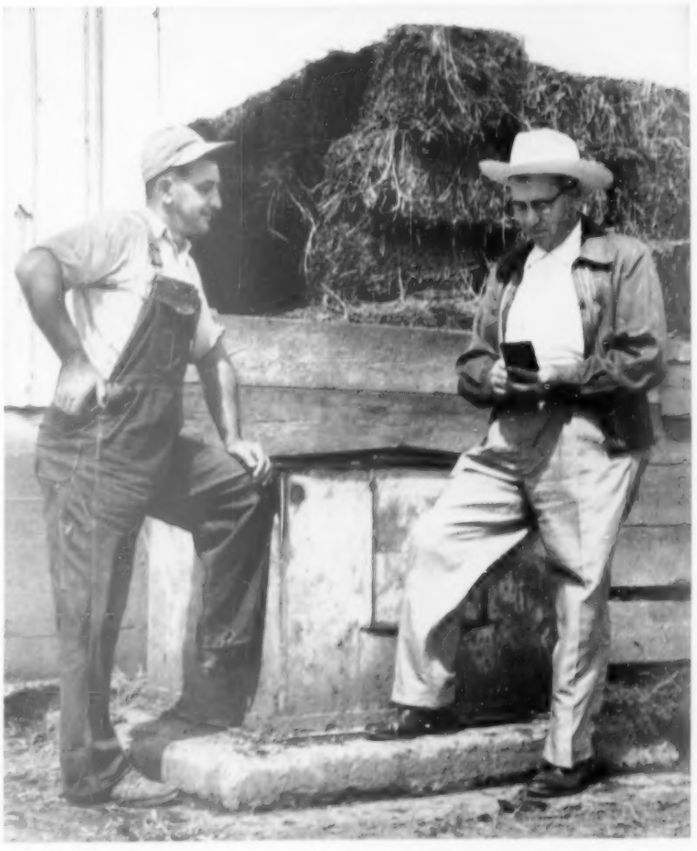
by Eugene S. Hahnel

Henry Tietjens is a careful, experienced cattle feeder. He generally feeds about 200 head a year on his 300-acre farm. The 1955-56 feeding season was his second using 'Stilbosol'-fortified supplements.

Mr. Tietjens *knows* exactly what his gains and costs are because he weighs his cattle regularly to keep track. It was his own set of records that sold him on the value of including supplements with 'Stilbosol' in his rations.

Daily Gains Increased .39 Lb.—"'Stilbosol'-fortified supplements increased my gains from 2.75 pounds per day to 3.14 pounds per day," Mr. Tietjens reports. "I could increase my gains in other ways, but the 'Stilbosol' way is much cheaper. I figure my gains are 4¢ per pound cheaper. That's the difference between profit and loss these days. I can *not* afford to be without 'Stilbosol' in my ration!"

Praises Feed Manufacturer—When asked how much help was provided by his feed manufacturer, Tietjens answered, "I could name several ways my feed manufacturer helps me. One way is to help me plan my management with good farm records. And, of course, they make sure I receive the latest feeding information that can help me increase my profits."



After a cattle-weighing session, Tietjens (left) and his feed manufacturer's representative, Harvey Schmidt, change guesses to facts by figuring gains and cost of gains on his cattle.

The average daily feedlot ration fed by Henry Tietjens consists of 15 lbs. corn silage, 13 lbs. corn (half shelled, half corn-cob meal), 4 lbs. hay, and supplement fortified with 'Stilbosol.'

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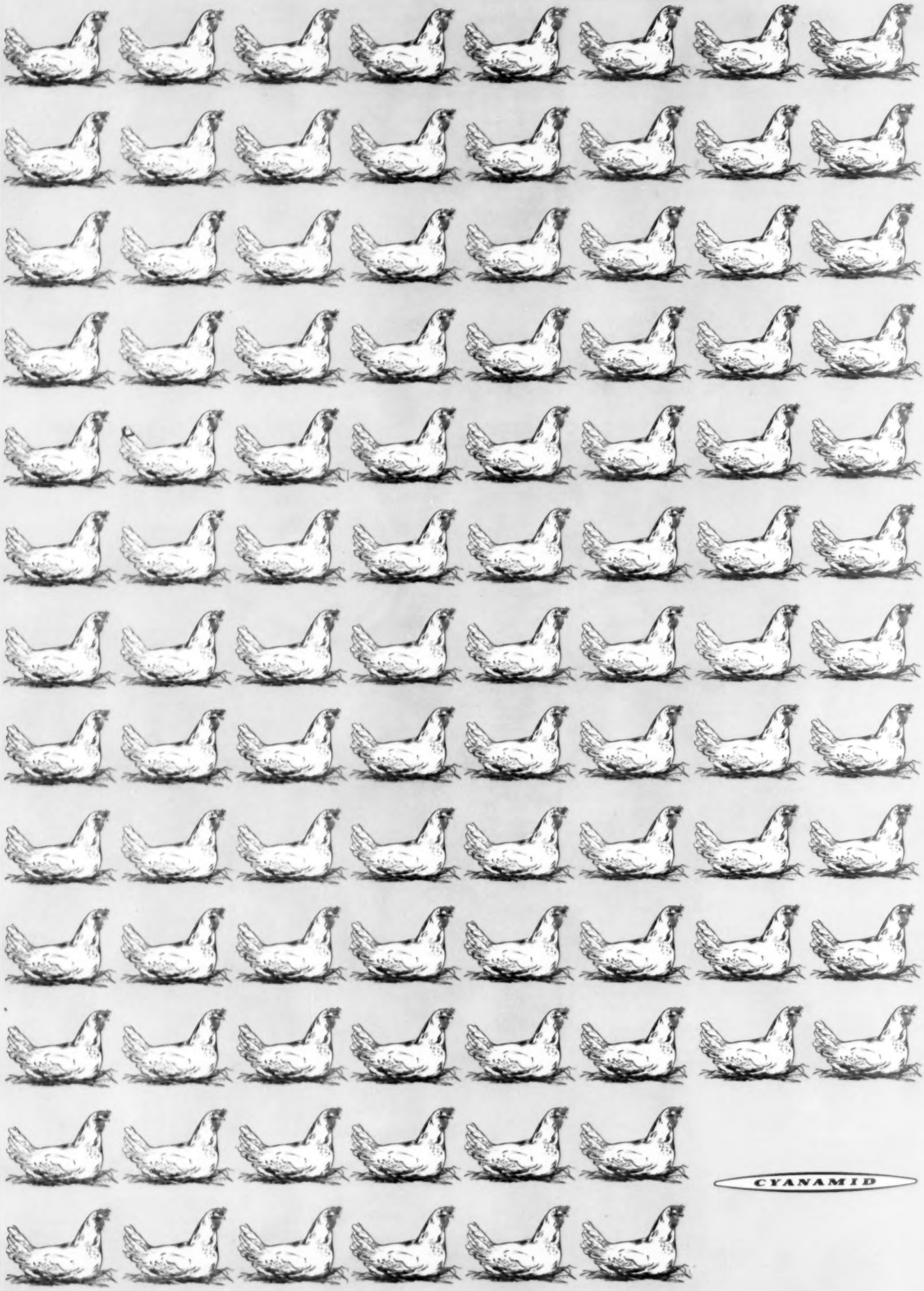
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...one of the many advantages you can point out to your customers when your layer and breeder feeds contain the right amount of Aureomycin.

When AUREOMYCIN is in a good layer feed in the *right* amount, hens are healthier. They have more vigor. They don't have those costly slumps caused by CRD and blue comb – by extreme cold or hot weather. They lay more eggs and keep on laying them over a longer time. Every week is a profit week for your customers.

In a trial on a poultry farm, 1,000 White Leghorn hens were divided into two groups of 500 each. One group got AUREOMYCIN in their feed, the other didn't. Over a year's period, the group fed AUREOMYCIN produced 1,800 *more* dozens of eggs. At 35¢ per dozen eggs, that meant an EXTRA RETURN – including the cost of AUREOMYCIN – of $400, or $80 per hundred hens.

Write for your free supply of a new leaflet called: "More Eggs to Sell." It tells all the advantages of AUREOMYCIN in layer and breeder feeds and includes trials proving these advantages which were made at Experiment Stations and on poultry farms. Animal Feed Department, Farm and Home Division, American Cyanamid Company, 30 Rockefeller Plaza, New York 20, New York.

Good layer and breeder feeds, with the right amount of Aureomycin, provide your customers with:

More eggs over a longer period.
More early and late season eggs.
More eggs per 100 lbs. of feed.
More eggs in the presence of disease.
More eggs in times of stress.
More chicks from increased hatchability.

Recommended levels for use of Aureomycin in layer and breeder feeds

1. In areas of average disease exposure, the continuous feeding of 50 grams of AUREOMYCIN Chlortetracycline per ton of complete feed is recommended.
2. In areas of severe disease exposure, the continuous feeding of 100 grams of AUREOMYCIN Chlortetracycline per ton of complete feed is recommended.
3. If there is a quick drop in feed consumption, hens should be fed 200 grams of AUREOMYCIN Chlortetracycline per ton of complete feed until feed consumption returns to normal. After that, the levels recommended above should be continued.

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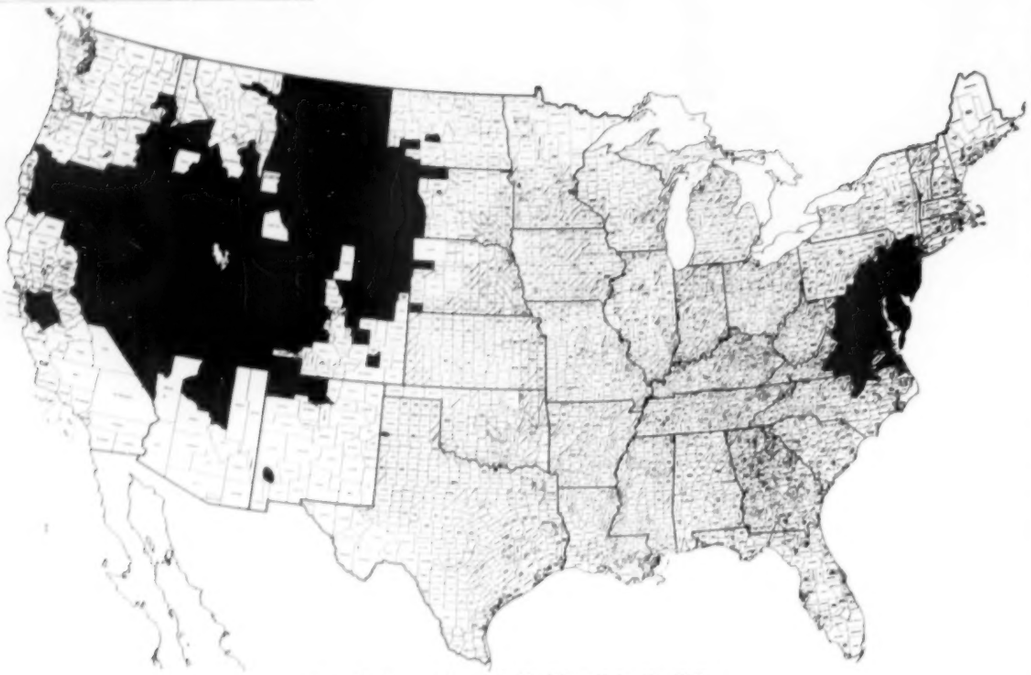

Distribution of the Alfalfa Weevil in the U.S.

Alfalfa Weevil Most Damaging In Western U.S.

WASHINGTON — The accompanying map of the U.S., shows graphically the heavy distribution of alfalfa weevil in both eastern and western portions of the country. With the heaviest infestation in the West, the insect nonetheless has established a firm foothold on the Atlantic Coast in New Jersey, Maryland, Delaware, Virginia, much of Pennsylvania and parts of New York and North Carolina.

Western states affected cover vast areas, including much of Oregon and Idaho, all of Nevada, Utah, and Wyoming and large areas of Montana and Colorado. The pest is also found in New Mexico, Arizona, North and South Dakota, and parts of Nebraska, according to the map. One spot in central California is also shown to be infested, as is a relatively small area of New Mexico.

The map was compiled in the plant pest survey section of plant pest control, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C. Information presented is based on state reports received to November, 1956, and from ARS records.

Demand Cited for Higher Fat Levels In Alfalfa Meal

CHICAGO — The National Renderers Assn. says it has found that feed manufacturers are asking for alfalfa meal which contains higher levels of fat.

This, the association notes, is because of the increased demand for higher energy poultry feeds. Poultry feeds account for more than half of alfalfa meal use, and it is known that the energy value of meal treated with 5% fat is about 50% greater than that of untreated meal, the association explains.

Prices of the surplus animal fats make it economically sound for the alfalfa meal producer to add higher percentages of fat when he considers that fat-treated meal commands a higher price than untreated meal, the renderers' association said in referring to prospects for greater use of fats in alfalfa meal.

Ground Broken for Memphis Installation

MEMPHIS, TENN.—Ground was broken Jan. 14 on President's Island, Memphis, for a grain storage warehouse facility by the Grain Elevator Warehouse Co. The new warehouse, situated on a nine-acre tract in the center of other grain storage facilities, will be located on a railroad siding. It also fronts a deep water channel leading to the Mississippi River, placing it on the island waterway. Completion of the warehouse is expected on or before April 1, and total cost will approximate $400,000. Space in the facility will be leased by National Alfalfa Dehydrating & Milling Co. and other dehydrators for inert gas storage of dehydrated alfalfa meal.

Alfalfa Aphids Pose Problem in Iowa

AMES, IOWA — Grasshoppers and spotted alfalfa aphids are the insects expected to pose the biggest threats to Iowa crops in 1957, Harold Gunderson and John Lilly, Iowa State College entomologists state.

The spotted alfalfa aphid, Iowa's newest pest, was found all over the state last fall. While it is not known if the insect can survive an Iowa winter, the entomologists said that even if the present population winter kills a new crop likely will be wind-borne into the state from the South during the 1957 growing season.

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STABILIZED ANIMAL FAT *Helps* Dehydrators Produce BETTER ALFALFA MEAL!

with More Profits to Dehydrators, Mill Customers, and Feeders

By Adding Stabilized Animal Fat to Dehydrated Alfalfa Meal *YOU GAIN THESE ADVANTAGES:*

1. Control Dust. The biggest problem of the dehydrator is solved by the addition of 1% to 2% of fat per ton after drying or during blending. This amount effectively controls dust and improves working conditions during grinding and bagging.
2. Improved Color. Fat improves and brightens color of alfalfa meal.
3. Preserve Protein Content. Fat reduces shrinkage considerably by capturing the high protein dust that may otherwise escape.
4. Enhance Vitamin A Stability.
5. Speed Pelleting of alfalfa meal.
6. Reduce Wear on Pelleting Dies due to the lubricating effect of fat.
7. Make Possible Bulk Shipments of alfalfa meal without danger of losing much of the fine powder.
8. Fats Can Carry the New Vitamin Antioxidants.
9. All the Above at Low Cost—Adding 1½% of inedible fat (30 lbs. per ton) will cost $1.35 extra per ton with fat at 7c per pound and alfalfa worth 2½c per pound.

NOTE: Fats and Oils are estimated as having been added to one-third of all the alfalfa meal produced in U.S.A. in 1955.

STABILIZE CAROTENE WITH FAT

Carotene in Alfalfa Meal is valuable but a great deal of it is lost between the dehydrating plant and the customer. Reduce this loss now by adding stabilized fat. Research shows that the addition of stabilized animal fat in levels from 1 to 5 percent improves carotene retention. It also gives the meal a desired greener color.

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The Value of Dehydrated Alfalfa

By Charles E. Reed

EDITOR'S NOTE: In the accompanying article, the author applies current prices of feed commodities to the results of a number of feeding trials to obtain a series of values for dehydrated alfalfa. The procedure was applied to feeding trials of beef cattle and lambs. The result sought was to determine how much dehydrated alfalfa is worth. The author, Charles E. Reed, is with Kansas State College, department of agricultural economics. Assistance was given to Mr. Reed in his work by his colleagues, Leonard W. Schruben and Ruth E. Clifton.

How much is dehydrated alfalfa worth? The answer to this question is important to dehydrators, feed manufacturers and livestock feeders. Men in the dehydrating industry are interested because the product provides their income. Feed manufacturers are concerned because it currently or potentially represents an ingredient in their mix. Feeders want to know if they can obtain profits from its use in their business.

There are probably several ways of answering the question. In the long run, however, production results probably constitute the most reasonable basis for determining the value of goods serving as productive agents. The feeder who uses dehydrated alfalfa in his operations does so in expectation of monetary gain. As a businessman, he measures results in terms of profits.

Practical livestock men are generally not in a position to experiment widely with different rations, nor to maintain elaborate records when they do. A particular feed is roughly good, bad or indifferent as they view its effect upon their cost and income considerations. As a result, material suitable for value calculations is not available from feeders.

The state agricultural experiment stations have done considerable work with various rations involving different types of livestock. Their records are usually kept in detail. Information on production performance, especially weight gain and feed consumption is a standard part of the published reports of their feeding trials. The observed results lend themselves to economic interpretation if output can be associated with specified itemized ingredient inputs of compared rations.

Feeding experiments may be couched in terms of (1) total weight gains and total feed used in a specified period of time; (2) average daily gain and average daily consumption of feed, and/or (3) amount of feed required to obtain 100 lb. gain in weight. A sufficient amount of information is usually given so that, regardless of how results are expressed, all of them may be reduced to a common basis. For the type of evaluation considered here, feed inputs per 100 lb. gain are the most appropriate standard use. Stated in this way, feeding trials may provide information on the relative efficiency of various ingredients which are substituted for one another in comparative tests.

The relationship of feeding efficiency to economic value is fairly easy to establish. A concrete example will illustrate the procedure. The July 7, 1956, issue of Feedstuffs contained the results of a beef cattle feeding experiment conducted at Texas A&M College. (J. K. Riggs and J. W. Gossett, Feeding Dehydrated Alfalfa Leaf Meal to Steer Calves Fed Low-Quality Prairie Hay.) Specific details of the investigation may be obtained from the article, but for this purpose only part of the tabular presentation will be considered.

Part of Table 1 shows the following feed consumed per cwt. gain (lb.).

	1	2	3	4
Cottonseed meal	181	156	153	147
Ground sorghum grain	352	305	298	287
Prairie hay	735	558	470	376
Dehydrated alfalfa meal	0	77	151	219

The first column represents a trial in which no dehydrated alfalfa meal was fed. In 2, 3 and 4 dehydrated alfalfa was introduced into the ration at the levels of 1, 1.98 and 2.97 lb. per head per day, respectively. Only a casual observation of the table shows that as dehydrated alfalfa is incorporated as successively higher levels, the amount of the other ingredients needed becomes less. Comparing all three levels of usage of dehydrated alfalfa meal with the trial containing none, the substitution may be shown as follows:

Ingredient	Level of feeding dehydrated alfalfa meal to beef cattle in pounds per head daily 1.00	1.98	2.97
Cottonseed meal	— 25	— 28	— 34
Ground sorghum grain	— 47	— 54	— 65
Prairie hay	—177	—265	—359
Dehydrated alfalfa	+ 77	+151	+219

Thus at the 1.0 lb. per day level, 77 lb. of dehydrated alfalfa meal replaced 25 lb. of cottonseed meal, 47

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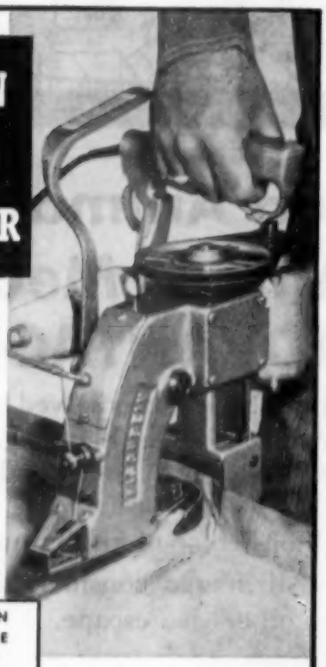

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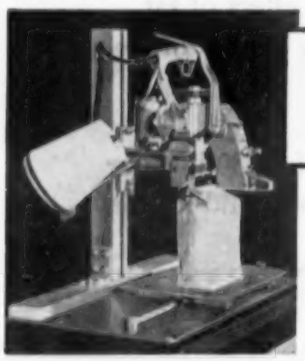

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Table 1—Variations in the Derived Values of Dehydrated Alfalfa Where the Budget Price of a Replaced Ingredient, Corn, Is Applied at Different Amounts

Number	Price of corn per bushel				
	$1.00	$1.25	$1.50	$1.75	$2.00
1	$76.78	$81.56	$86.60	$91.62	$96.40
2	62.54	66.00	68.48	70.96	73.42
3	70.00	83.12	96.26	109.26	122.40
4	67.94	72.16	76.16	80.48	84.68
5	61.28	64.54	67.78	71.16	74.40
6	64.08	71.42	79.18	87.34	96.28
7	50.00	51.58	53.16	54.74	56.34
8	32.76	44.52	55.88	67.22	78.98
9	67.64	76.04	84.44	92.84	100.84
10	61.34	63.46	65.54	67.64	69.74

lb. of ground sorghum grain and 177 lb. of prairie hay. The replacement capacity of dehydrated alfalfa meal used at the higher levels of daily feeding may be similarly interpreted.

Economic Terms

It is perhaps impressive in this instance that dehydrated alfalfa meal replaced substantial amounts of other feedstuffs. When these physical amounts are translated into economic terms, they become more meaningful, at least to the person who views results in dollars and cents. In order to analyze these findings it is necessary to put price tags on the ingredients involved.

If we assume that cottonseed meal is worth $3.65 cwt., grain sorghum $1.20 bu., prairie hay $10 ton and grinding costs $0.15 cwt., the value of the ingredients replaced becomes:

Ingredient	Level at which dehydrated alfalfa is used		
	1.00	1.98	2.97
Cottonseed meal	$0.91	$1.82	$1.24
Ground sorghum grain	1.08	1.24	1.49
Prairie hay	0.88	1.32	1.80
Total	$2.87	$3.58	$4.53

This means that at the prices given, 77 lb. of dehydrated alfalfa meal, fed at the level of 1 lb. per day, is worth $2.87; 151 lb. (at the 1.98 lb. daily level) is worth $3.58; and 219 lb. (at the 1.98 lb. rate) is worth $4.53, all in terms of replacement values. Converting these into values per ton is a simple step, and by doing so the following relationship is obtained.

Level at which dehydrated alfalfa is fed	1	1.98	2.97
Value of dehydrated alfalfa, ton	$74.54	$47.42	$41.36

There would be very little foundation, indeed, for assuming a generalized value from the results of one experiment. An indication of value, however, may be obtained from a series of investigations, and averages calculated in which there can be some degree of confidence. It should be kept in mind that each feeding trial is unique as to conditions and other factors and should therefore differ from one another. Hence variation in derived values should be expected and interpretations made giving full recognition to the range of answers found.

The values so derived are a concomitant result of replacement capacity and prices assigned to the other ingredients. The selection of prices to be used is at best somewhat arbitrary. For the purpose of calculations here, budget prices in use in Kansas State College farm management classes were chosen. These attempt to establish a proper relationship among commodities and to project most probable prices for the next year or so. In a few cases, average figures were utilized. The prices applied to the various replaced commodities: Corn $1.50 bu.; sorghum grain, $1.25 bu.; rolled barley, $3.50 cwt.; beet pulp, $3 cwt.; dried molasses, $4 cwt.; soybean oil meal, $4.20 cwt.; cottonseed meal, $3.65 cwt.; linseed oil meal, $4.20 cwt.; prairie hay, $12 ton; prairie hay (poor quality) $10 ton; alfalfa hay, $20 ton; alfalfa hay (poor quality) $16 ton; corn silage, $6 ton; beet pulp silage, $6 ton; grinding (custom) $0.15 cwt.

If we apply these prices to the results of a number of feeding trials, a series of values for dehydrated alfalfa are obtained. Individually these may be considered as the indicated value under a unique condition. When, in turn, an average is taken for any particular series of numbers, the resulting figure is a general approximation of the whole. This is to say that an average is the most representative figure in a series of numbers and for the purpose here is the most reasonable estimate of value.

The procedure discussed was ap-

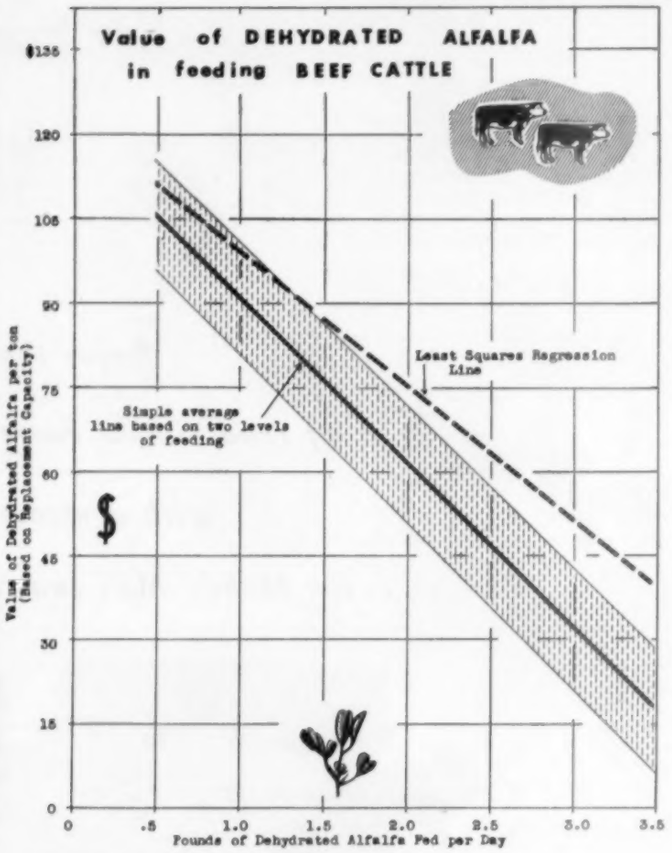

Exhibit I. Value of Dehydrated Alfalfa in Feeding Beef Cattle

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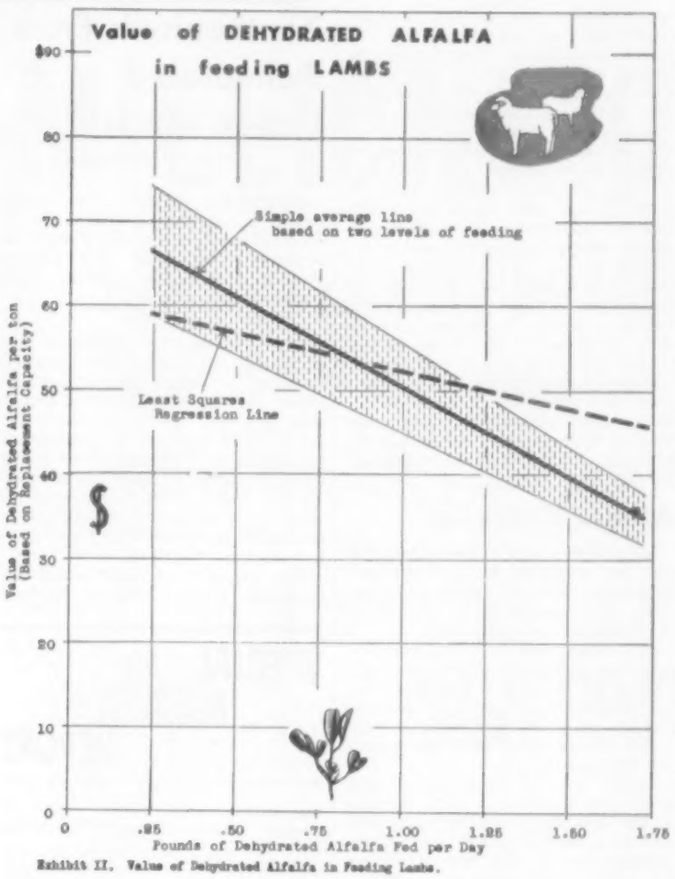

Exhibit II. Value of Dehydrated Alfalfa in Feeding Lambs.

plied to feeding trials of beef cattle and lambs. It was found that individual figures for any particular level of daily feeding with either animal varied widely. Some extremely high values were derived and also some extremely low ones, including negative values. There was a consistent tendency toward lower values as the daily feeding rate increased.

Average values from beef cattle experiments are as follows:

Rate of daily feeding (lb.)	Value of dehydrated alfalfa (per ton)
.5	$119.90
1.0	90.62
2.0	61.43
3.0	31.78
3.25	49.14
3.5	52.07

Sufficient numbers of observations were available only at the 1.0 and 3.0 lb. levels for any degree of confidence in the figures obtained. For that reason these two points were used in drawing the simple average line for Exhibit I. In view of the wide variation of values displayed for each feeding rate, the use of any single average figure seemed highly questionable. A zone of probable expected averages has, therefore, been provided in the shaded portion of the exhibit. The zonal limits were statistically computed to show where averages would be expected to fall in two cases out of three from further experimentation and calculations conducted under similar circumstances. This gives us a range at the 1.0 lb. per day level of $80.70 to $100.54, and the 3.0 lb. level, $20.98 to $42.58. Values for intermediate feeding rates may be read from the graph in the same manner.

Averages were found for other feeding levels, as indicated previously but the number of observations for them were relatively few.

In order that these should not be entirely overlooked, a least squares regression line is included in Exhibit

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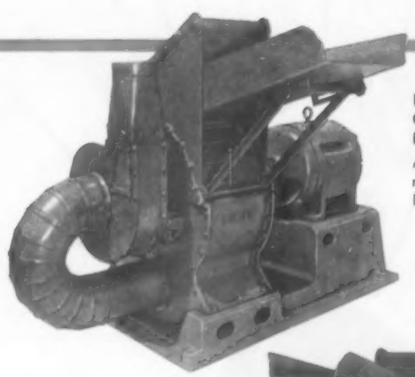

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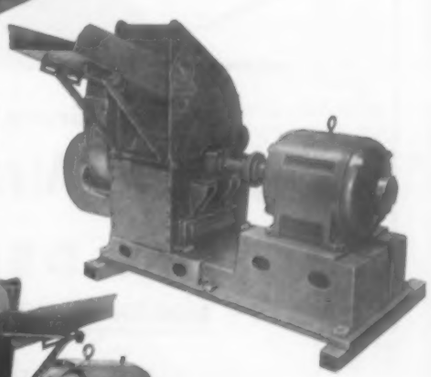

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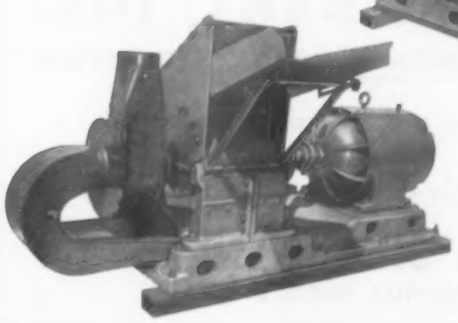

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I which takes these averages into consideration. This is a mathematical best fit giving equal weight to all average points. Values read from this line would be somewhat higher than those read from the simple average line.

Calculations for lamb feeding experiments show the following relationships:

Rate of daily feeding (lb.)	Value of dehydrated alfalfa (per ton)
0.25	$43.62
0.50	61.01
0.75	79.44
1.00	44.80
1.50	39.48
1.75	47.26

It was true in this case also that only two averages, at the 0.50 and 1.50 pound level came from a sufficient number of observations for serious consideration. Thus these two were used for the average line in Exhibit II. The same procedure was used as in Exhibit I to provide a safety zone and a least squares regression line. Reading from the graph, we find that dehydrated alfalfa is worth somewhere between $54.05 and $67.97 per ton at the 0.5 level, and from $36.57 to $43.29 for the 1.5 lb. rate. Values read from the regression line would be lower than from the simple average line at the feeding level of 0.75 lb. per day, and higher at daily feeding rates of 1.00 lb. and above.

The validity of the type of evaluations pursued here is limited by several factors, not the least of which stems from the prices used for replaced ingredients. This is demonstrated in Table 1 where corn is assigned values ranging from $1@2 bu. This grain was represented in our budget prices at $1.50 bu. A few of the individual values (without regard to daily feeding rate) from beef cattle tests are shown in Table 1 in the $1.50 column. The variation in the value of dehydrated alfalfa under different assigned prices for corn is indicated by the horizontal changes. Thus in the first row, the value of dehydrated alfalfa increases from $76.78 to $96.40 ton as the price of corn is increased from $1 to $2 per bushel. Corn was only one of several replaced ingredients in many cases. Were more than one replaced ingredient price allowed to vary, the changes in the derived values for dehydrated alfalfa would be magnified.

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O. J. Attoe and A. E. Peterson report that alfalfa hay yields have averaged 3½ tons per acre annually for the past eight years on this low fertility land that was built up with a full feed of plant nutrients following adequate liming.

Before the soil improvement program was launched in 1947, the soil in the test field was the most acid and least fertile in the area. Many farmers had to buy hay at $30 or $35 a ton to feed their dairy cows.

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STATE COLLEGE, N.M. — The spotted alfalfa aphid cost New Mexico farmers three million dollars in 1956, according to John J. Durkin, extension entomologist at New Mexico A&M College.

Xanthophylls From Dehydrated Forage Meals

By Dr. C. R. Thompson

EDITOR'S NOTE: The author of the accompanying article, Dr. C. R. Thompson, is associated with the Western Utilization Research Branch, U.S. Department of Agriculture, Albany, Cal.

The demand by consumers for yellow-colored fryers has been increasing in recent years. This demand is reflected by poultry buyers who pay less for birds which are deficient in color. The poultryman, in an effort to produce more highly colored birds, has taken his problem to the feed manufacturer who, in turn, has sought every means to compound a ration that would give a well-pigmented bird.

The pigments in feed which are necessary to give color in chickens

SPECIAL ALFALFA REPORT

are called "xanthophylls" and are similar to the carotenes which are the yellow, vitamin-A-active pigments found in many green and yellow feedstuffs. Most xanthophylls have no known vitamin activity but are taken from the feed and deposited in the shanks and skin of broilers and egg yolk in laying birds.

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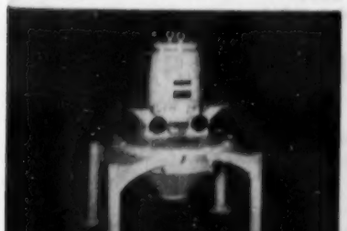
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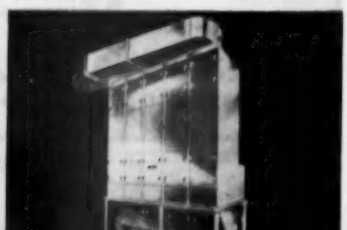
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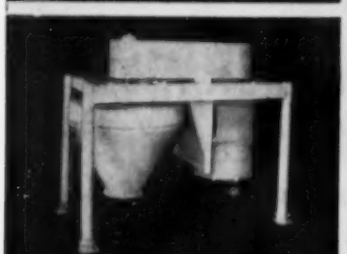
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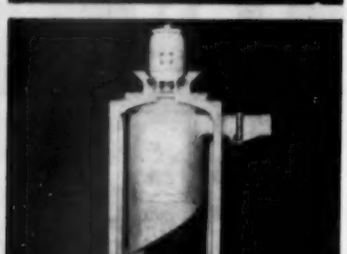
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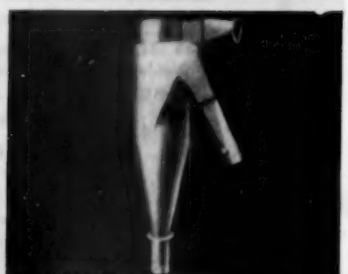
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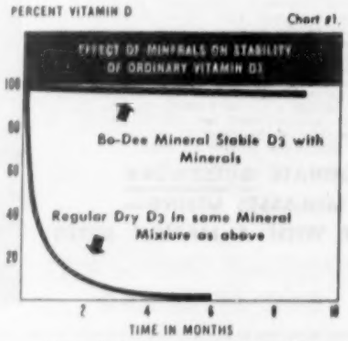

Above chart shows rapid and complete deterioration of Vitamin D3 in a mixture of customarily used feed minerals. 9 parts minerals to 1 part Vitamin D in cereal carrier

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and others may drain most of the color out of the birds even though there are plenty of xanthophylls in the feed. No satisfactory solution to this disease problem is apparent at present but a better recognition of the value of such ingredients as dehydrated alfalfa may partially overcome the lack of pigments in other feed ingredients.

There is little sound information on the activity of the various xanthophylls in causing pigmentation of poultry. Some basic research work is being done on this subject but a well-integrated program should be started to find out which of the several xanthophylls cause pigmentation and the relative potency of each.

Many mixed feeds carry insufficient xanthophylls. Inclusion of freshly harvested yellow corn may give adequate pigmentation but corn gluten meal and several by-products have been employed to insure better color. A xanthophyll oil extracted from corn is a good product but the quantity produced is very limited. Yellow corn or corn products are available only at high prices in many parts of the U.S. and for that reason are sparingly used. This is particularly true in the western United States. Furthermore, there is no assurance that use of yellow corn in the ration will always cause the desired degree of coloration.

When chlorophyll was being manufactured and sold in large amounts, an oil by-product was used in mixed feeds with some success. This product was relatively expensive per unit of pigment and was often difficult to add as it was a gummy red oil. When dispersed on a solid carrier it became unstable because of the ready oxidation of these pigments. At present, the supply of this product is also very limited.

A number of attempts have been made to recover and utilize vegetable wastes, especially those from green plants, by dehydration and grinding to meals. Excellent products are obtained which would provide extra amounts of xanthophylls and other nutrients for mixed feeds. However, vegetable wastes as a source of xanthophyll have not been satisfactory because often the supply of raw material is limited, or very seasonal, or the final product is variable. In addition, the changing of feed formulations to include minor ingredients is usually avoided unless a continuing supply of the particular supplement is available and of uniform quality.

The possibility of improving pigmentation by using more high quality dehydrated alfalfa meal or grass meal is worth investigating. These meals are known to be high in fiber and thus reduce the energy content of a diet. Also when they are fed at high levels they may cause reduced growth in chicks. However, at lower levels, stimulation in weight gain is usually observed presumably because of unidentified growth promoters over-shadowing the inhibitors.

High quality dehydrated alfalfa meal as produced usually contains 140 mg. of xanthophylls per pound. Grass meal may be richer. Being meals, they mix readily and are thus easily formulated with other ingredients. They also have 125,000-150,000 I.U. of vitamin A as carotene, numerous B vitamins and minerals. They are good sources of presently unidentified growth factors. At 65¢ per gram, a price being obtained for xanthophylls in concentrates in oil, these pigments (280g) would be worth $182 per ton.

Presently-used inert gas storage of forage meals preserves essentially all of these pigments and provides the feed manufacturer with a standard, high-potency product. Forage meals may also be treated with an antioxidant to preserve pro-vitamin A (carotene). This stabilizer serves to protect the xanthophylls to much the same degree, thus yielding superior product for better pigmentation.

In obtaining a better pigmenting feed the feed manufacturers should weigh the relative advantages of dehydrated forage meals versus their known faults. They are the richest source of xanthophylls that are readily available, stable and easily incorporated which can be added to feeds. It may be that the inclusion of more of these pigment-rich ingredients in certain feeds will better meet the requirements of the poultry industry.

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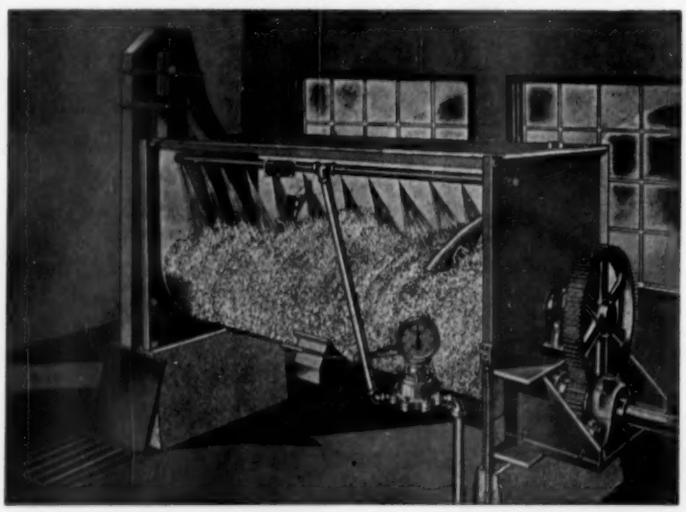

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Carcass and Shank Pigmentation

As Affected by the Level Of Xanthophyll in the Diet

By William B. House

EDITOR'S NOTE: William B. House has been senior chemist with the Midwest Research Institute, Kansas City, since 1954. Previously he was for several years director of nutritional research for the National Alfalfa Dehydrating & Milling Co. in the field of pigmentation of broilers and unknown factors required by the chick.

The objective of the investigations summarized in this brief report was to determine the quantity of dietary xanthophyll needed to produce an adequate degree of carcass color in dressed poultry.

Experimental: White Rock Yoselson strain chicks were used in all of the trials. There was an advantage in using the White Rock instead of the New Hampshire since the latter have a complicating brown red pigment in the shank skin. The chickens were raised in batteries and given water and feed ad libitum. The feeds were freshly prepared every two weeks and were analyzed each time to insure

SPECIAL ALFALFA REPORT

that the xanthophyll levels were maintained consistent throughout the test period.

During the trials the birds remained healthy and there were no indications of any disease being present. The growth of birds was normal in every respect.

The feed formulation shown in Table 1 was used in most of our work.

A comparison was made between the xanthophyll content of the feed and the assay of shank skin pigmentation by color standards and pigment extract densities plus carcass color evaluation by an impartial panel. This data has been tabulated in Table 2.

The shank color ratings were made with either our A or C series of standard color. We made up our own color series after a vain attempt to purchase one suitable for our purposes. These series had to include a range of color from white with a light green shade to a deep orange yellow. The shank skin pigment densities were determined by the method outlined by Heiman and Tighe (Victor Heiman and L. W. Tighe. Observations on the Shank Pigmentation of Chicks, Poultry Science, Vol. 22, pp. 102-107 1943). This method was modified by using a Beckman model B spectrophotometer. An adsorption curve was constructed and all determinations were made at a wave length of 446 mu.

It is difficult to assay skin color. Perhaps a method could be worked out successfully extracting the skin pigment with a suitable solvent and then use an appropriate physical or chemical determination. In the work outlined we assayed skin color by its eye appeal to an impartial panel of judges. Ultimately the color of the

Table 1—Feed Formulation

Corn, yellow or white, lb.	62.0
Soybean oil meal (50%), lb.	30.0
Fish meal (75%), lb.	4.0
Bone meal, lb.	2.5
Limestone, lb.	1.0
Salt iodized, lb.	0.5
Manganese sulfate, lb.	0.0125
Vitamin A-D oil,* gm.	100
Choline chloride, gm.	15
Penicillin,† gm.	100
Vitamin premix,‡ gm.	50

*Supplies 6,000 I.U. vitamin A and 400 I.C. units vitamin D_3 per pound of feed when used on the basis of 100 gm. per 100 lb. of ration. This source of vitamin A and D was a refined fish oil from distillation products.

†Supplies 6.6 mcg. vitamin B_{12} and 4.4 mg. of procaine penicillin per pound of ration when supplemented at a level of 100 gm. per 100 lb. of ration.

‡50 gm. of this premix per 1 lb. of ration supplied 1 mg. of riboflavin, 2 mg. of Capantothenate and 5 mg. of niacin per pound of ration.

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Table 2—Comparison of Shank Skin Pigment Extract Densities With Visual Shank Skin Color and Carcass Ratings

Ration No.	Color of corn	Xanthophyll supplement	Carcass rating	Xanthophyll in ration mcg./lb.	Shank skin ratings	Shank skin pigment extract densities
113	White	None	B.W.	800	0.75A	0.015
119	White	None	B.W.	805	0.62A	0.011
116	White	Xanthophyll concentrate* (0.33%)	Poor	3150	1.33A	0.032
114	White	Corn gluten meal (5.0%)	Poor	4200	4.33A	0.061
120	White	Corn gluten meal (5.0%)	Poor	4615	4.25A	0.062
115	White	Dehyd. alfalfa meal (1.5%)	Poor	4710	3.25A	0.068
121	White	Dehyd. alfalfa meal (2.0%)	Poor	5564	3.06A	0.050
117	White	Xanthophyll concentrate* (0.66%)	Poor	5750	3.60A	0.053
123	White	Xanthophyll concentrate* (1.0%)	Fair	6910	5.25A	0.080
126	Yellow	None	N.A.	7000	5.22A	0.086
128	Yellow	Dehyd. alfalfa meal (1.5%)	N.A.	9320	5.75A	0.097
129	Yellow	Xanthophyll concentrate* (0.33%)	Fair	9345	5.40A	0.086
127	Yellow	Corn gluten meal (5.0%)	Good	10350	7.50A	0.119
125	White	Xanthophyll concentrate* (1.5%)	Good	11275	6.30C	0.086
103	Yellow	Dehyd. alfalfa meal (3.5%)	Excel.	12045	7.12C	0.145
130	Yellow	Xanthophyll concentrate* (0.66%)	Excel.	12170	7.75A	0.132

*The xanthophyll concentrate consisted of a crude xanthophyll extract from dehydrated alfalfa meal dispersed on dehydrated alfalfa meal. B.W.—Bleached white. N.A.—Not acceptable.

dressed carcass is subject to the customer's approval. It should be noted here that all the birds were dressed in a processing plant by the scald method.

Discussion: According to the data in Table 2 there is a gradual increase in the degree of shank skin color as you progress from 800 mcg. of xanthophyll per pound of feed up to 12,000 mcg./lb. The chicks on rations 125 and 103 were judged with our C series color standard because the highest color rating in the A series was not adequate.

You will note that the degree of carcass color was quite low in the range of 800 mcg. to 6,000 mcg. of xanthophyll per pound of feed. Actually there was very little if any difference between the skin color of the birds in the 3,000 to 5,000 mcg. per pound range. In our opinion the ration has to contain around 9,500 to 10,000 mcg. of xanthophyll per pound before the skin color could be considered acceptable. In terms of shank skin pigment extract densities a bird with a well-colored carcass had a density rating of 0.08 to .10 for the shank skin discs. We also found that if the disc is removed from near the toes the color density is higher than if it came from the hock region. Furthermore, it did not appear feasible to express pigment extract densities in terms of shank skin disc weight because the thickness of the underlying connective tissue varied so widely. If the scales are removed and extracted the value would be lowered because some of the pigment is deposited in the upper layers of the white connective tissue in the shank skin.

We have grown chicks on rations that contained as high as 26,000 mcg. of xanthophyll per pound. These birds had an orange yellow body skin and red orange shank skin. In fact this level of xanthophyll so overloaded the birds that the base of the feathers was lemon yellow. These chicks had a normal rate of growth.

Subsequent tests with chicks on a similar ration to the one described herein with a level of 9,000 mcg. of xanthophyll per pound produced birds at 10 weeks of age with an adequate degree of pigmentation.

Table 3—Xanthophyll Requirements

1 Yel. corn lb. per 100 lb. feed*	2 Dehydrated alf. meal lb. per 100 lb. feed†	3 Expected amount of xanthophyll present in 1 lb. of ration mcg.	4 Additional xanthophyll needed per lb. of ration mcg.
20	2.0	4300	5350
20	2.5	4950	4700
20	3.0	5600	4050
20	3.5	6250	3400
20	4.0	6900	2750
20	4.5	7550	2100
20	5.0	8200	1450
30	2.0	5150	4500
30	2.5	5800	3850
30	3.0	6450	3200
30	3.5	7100	2550
30	4.0	7750	1900
30	4.5	8400	1250
30	5.0	9050	600
35	2.0	5575	4075
35	2.5	6225	3425
35	3.0	6875	2775
35	3.5	7525	2125
35	4.0	8175	1475
35	4.5	8825	825
35	5.0	9475	175
40	2.0	6000	3650
40	2.5	6650	3000
40	3.0	7300	2350
40	3.5	7950	1700
40	4.0	8600	1050
40	4.5	9250	400
40	5.0	9900	None
45	2.0	6425	3225
45	2.5	7075	2575
45	3.0	7725	1925
45	3.5	8375	1275
45	4.0	9025	625
45	4.5	9675	None
45	5.0	10325	None
50	2.0	6850	2800
50	2.5	7500	2150
50	3.0	8150	1500
50	3.5	8800	850
50	4.0	9450	200
50	4.5	10100	None
50	5.0	10750	None
55	2.0	7250	2400
55	2.5	7900	1750
55	3.0	8500	1100
55	3.5	9200	450
55	4.0	9850	None
55	4.5	10500	None
55	5.0	11150	None
60	2.0	7700	1950
60	2.5	8350	1300
60	3.0	9000	650
60	3.5	9650	None
60	4.0	10300	None
60	4.5	10950	None
60	5.0	11600	None
65	2.0	8125	1525
65	2.5	8775	875
65	3.0	9425	225
65	3.5	10075	None
65	4.0	10725	None
65	4.5	11350	None
65	5.0	12000	None

*Average xanthophyll content 8500 mcg./lb. †Average xanthophyll content 130,000 mcg./lb.

Actually computed for dehydrated alfalfa meal 100,000 I.U. vitamin A. To figure xanthophyll units (mcg./lb.) in relation to carotene (mcg./lb.) multiply the carotene value by 2.1. This factor converts carotene to xanthophyll.

Example: A sample of dehydrated alfalfa meal contains 80,000 I.U. vitamin A.
80,000 I.U. x 0.6 = 48,000 mcg. of carotene per pound.
48,000 x 2.1 = 100,800 mcg. of xanthophyll.

To figure xanthophyll values for corn gluten meal add 600 to value in column 3 for every 1.0 lb. included per 100 lb. of finish feed. Example: Feed manufacturer's formula calls for 50% yellow corn, 2.5% dehydrated alfalfa meal, 3.0% corn gluten. According to the chart 50 lb. corn and 2.5 lb. yield 7500 mcg. of xanthophyll; 3.0% corn gluten meal 3 x 600 = 1800; 7500 + 1800 = 9300 mcg./lb.

For basis of estimation a ration containing 60% yellow corn, 3.5% dehydrated alfalfa meal (100,000 A) was selected as optimum.

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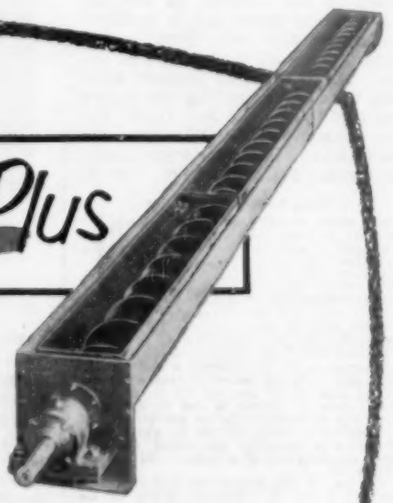

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Dr. Thomas W. Dowe

BEEF RATIONS—The value of dehydrated alfalfa in beef cattle rations will be discussed by Dr. Thomas W. Dowe, head of beef cattle feeding and management research, University of Nebraska, at the meeting of the American Dehydrators Assn. Before going to Nebraska he was with the animal husbandry department, South Dakota State College, where he was in charge of range livestock management and nutrition studies. His work at Nebraska has been with fattening and wintering rations, roughage utilization, urea, calcium and phosphorus and grazing studies.

Evidently the eastern states poultry processors demand a more highly colored bird.

Table 4—Xanthophyll Furnished by Varied Amounts of Xanthophyll Concentrate No. 1
(A minimum guarantee of 600,000 mcg. of xanthophyll per pound)

Amount of concentrate incorporated in a ton of feed (lb.)	Amount of xanthophyll supplied on a pound of finished feed basis (mcg.)
1	300
2	600
3	9900
4	1200
5	1500
6	1800
7	2100
8	2400
9	2700
10	3000
11	3300
12	3600
13	3900
14	4200
15	4500
16	4800
17	5100
18	5400
19	5700
20	6000

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Spreading Alfalfa Looks Promising

BLACKSBURG, VA. — Alfalfa growers may one day be able to plant high producing strains of alfalfa that will spread, producing several new plants from each "mother" plant, judging from findings of Virginia Polytechnic Institute.

Researchers at VPI agricultural experiment station, along with those in several other states, are testing several varieties of "creeping" alfalfa, which they hope may help replenish stands which are thinned by adverse climatic, soil, and disease factors.

These spreading alfalfas are being evaluated for their reaction to diseases, productivity, survival when grown with grass, quality, hardiness, and adaptability—as well as effectiveness in spreading and persistence under grazing.

None of the present types of spreading alfalfa are productive enough for wide adoption, so scientists are crossing them with some of the outstanding hay alfalfas. The main objective is to add spreading ability to the best of the hay types that have good resistance to diseases and insects.

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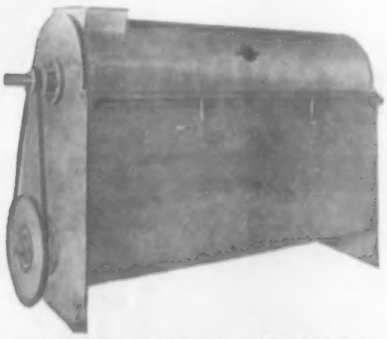

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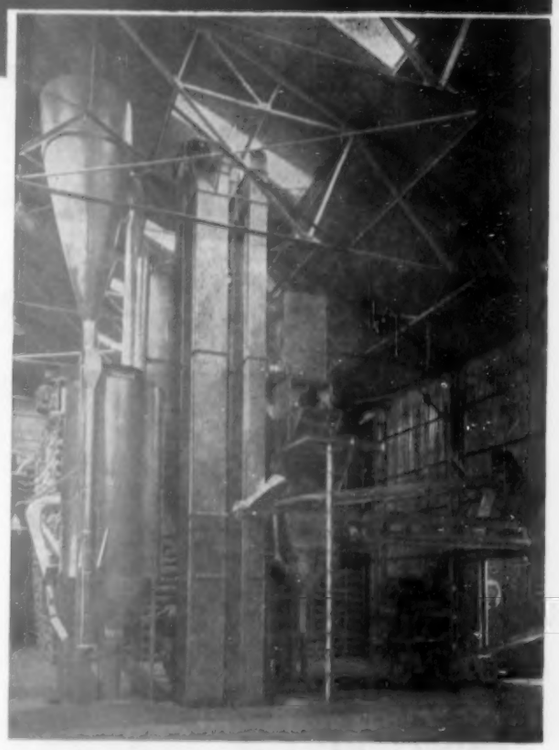

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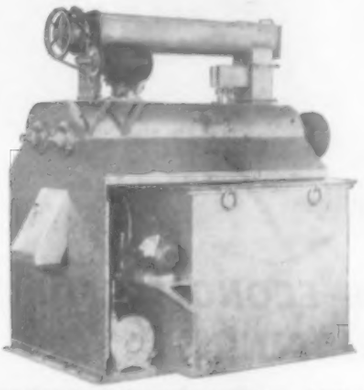

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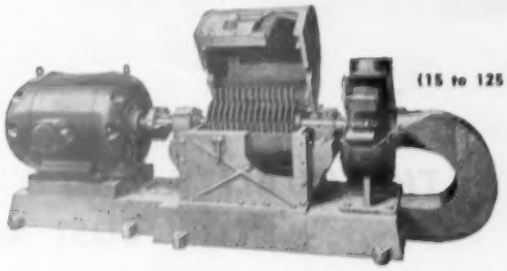

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Spotted Aphid — What Now?

By Dr. Roscoe E. Hill

Chairman, Department of Entomology, University of Nebraska

Alfalfa's most serious pest, the spotted alfalfa aphid, moves on and on in its destructive way. Although found in but six, or possibly seven, states in 1954, by the end of 1955 it had spread to 14 states. During the 1956 season this "jet age" pest was reported from 16 additional states or from 30 of the 48. Probably never before has an introduced insect spread so rapidly over the U.S.—actually from coast to coast in three years.

What now? Alfalfa growers, entomologists, agronomists and others are asking many questions which might be grouped under one leading inquiry, what can we expect from this destructive insect now? Frankly, no one has the answers. No one knows what will be the final economic status of the aphid in this country. It is spreading to new areas and the infestation pattern for the country as a whole is still unsettled.

During the past three years the aphid has caused very severe losses over the southwestern two-thirds of the U.S. One must naturally assume it will be equally damaging east of the Mississippi River, the area invaded for the first time during 1956. These losses take the form of defoliation of the plants, reduction in stand life, killing of young seedling plants, secretion of a honeydew which gums plants and harvesting machinery, and the development of a fungus on the honeydew which affects the quality of harvested hay. A California report indicated the feed value of damaged hay was lowered, necessitating the addition of protein supplements to animal rations.

What of Winter Survival?

One of the important considerations of the moment is—over how extensive an area will the aphid survive the winter of 1956-57? An answer to that question would reveal the base from which next season's infestation may build up and spread. The aphid migrates during the summer into some areas in which it is unable to survive the winters; especially is this true northward. In 1955 spotted alfalfa aphid was found in 50 Nebraska counties yet it was unable to come through the winter months in that state. In fact, the species seems to have "died back" during the winter of 1955-56 to southeastern Kansas, southwestern Missouri and south into Arkansas, Louisiana, Oklahoma, Texas, and in southern New Mexico, Arizona and parts of California. From these nine states it spread far and wide during 1956.

Roughly the species seems to have overwintered in Kansas south of the isothermal line for an average annual minimum temperature of —5°F. This line extends eastward in southern Missouri up the Mississippi river north of St. Louis across southern Illinois and into Indiana and Ohio north of the Ohio river. Most of Virginia, North and South Carolina have much higher average annual minimum temperatures. Therefore, on the basis of past experience (temperature-wise) it seems very likely that this aphid could winter over in much of the area east of the Mississippi into which it spread during 1956. There are, of course, factors other than temperature which may affect survival.

In the south central and southwestern areas the aphid is active all year, the populations tending to fluctuate from low to high to low according to stage of crop growth, seasonal temperatures, rainfall, number of parasites and predators present and other factors. Native predators (lady beetles, lacewing flies and others) and fungus diseases have almost wiped out aphid infestations in some fields—often over rather extensive areas. This usually follows several weeks of severe aphid injury to the alfalfa and generally too late to save infested fields. However, the effects of such natural biological controls in one area may serve to slow down the spread of the aphid into others. Intensive biological control activity in Kansas following the early severe infestation of 1956 may have been a factor in postponing for several weeks the northward migration of the aphid into Nebraska, South Dakota and Iowa last year.

Spotted Alfalfa Aphid Adult Female

Photo by Department of Entomology, Kansas Agricultural Experiment Station, Kansas State College

Full Recognition of Problem

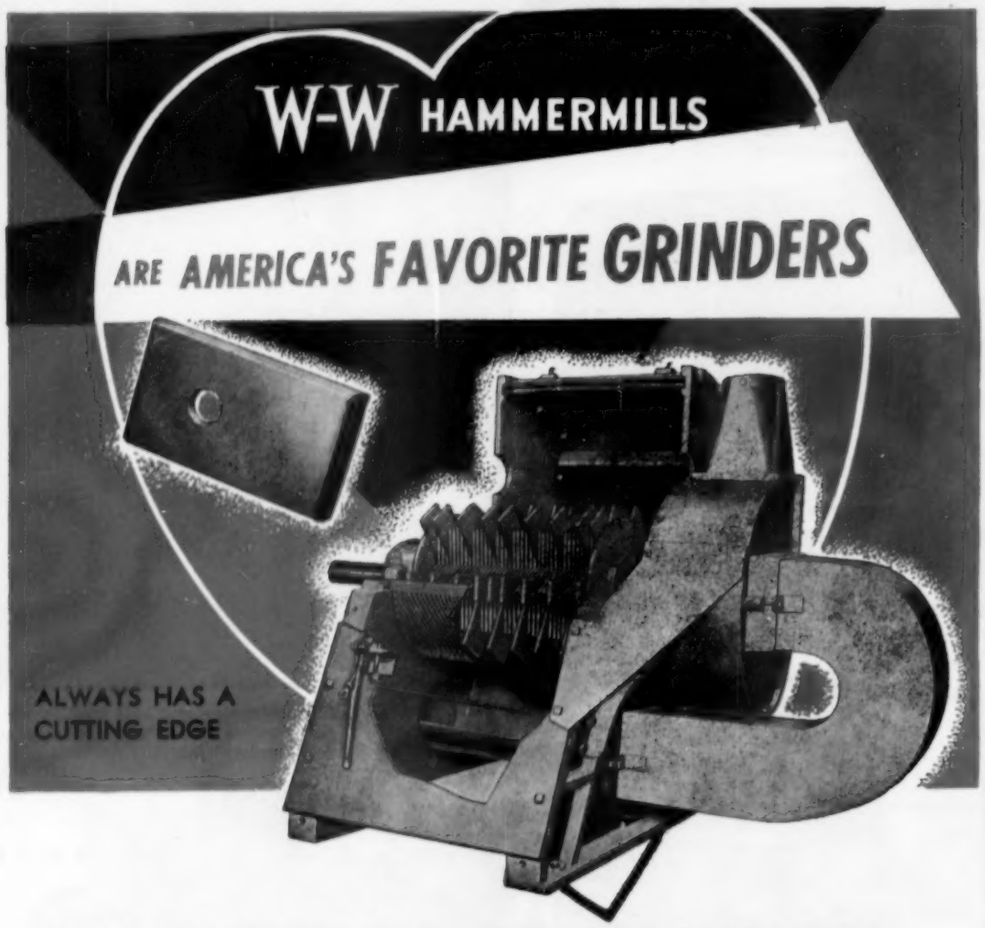
Entomologists, alfalfa plant breeders, the directors of agricultural experiment stations in the affected states and administrators of federal research agencies fully recognize the problem before the country. As the aphid moves into new areas persons concerned must seek ways of solving the problem. This requires research to provide immediate relief as well as fundamental long time studies designed to learn how to live with the aphid. In addition to stepping up research in some states, certain areas are planning regional attacks on the problem. An example of such a regional attack is a research project being readied for activation July 1, 1957, in the 12 north central states. Similar studies are already underway in the southwestern states.

Since the aphid is now so widespread in so many different environments, it is difficult to list methods of control that would fit any and all conditions. Control measures of an immediate nature must be adapted to local conditions. Some measures advocated to lessen injury include:

(1) **Maintenance of good growing conditions:** Adequate fertility and irrigation permit the plants to withstand the aphids somewhat.

(2) **Early cutting:** Where an aphid infestation builds up, a crop often may be saved by cutting early. If the infestation persists the subsequent growth should be sprayed.

(3) **Use of insecticides:** Malathion and parathion are the chemicals now widely recommended. Rates of from four to six ounces per acre for



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parathion and from ten to twelve for malathion are generally recommended. It may be necessary to make a second or third application if fields are reinfested. Insecticides should not be applied later than seven days (for malathion) and 15 days (for parathion) prior to cutting, in order to avoid harmful residues. Mixtures of these two materials should not be used.

(4) **Plant resistant varieties:** One such variety, Lahonton, is available in limited quantity for some southwestern areas.

Research Needs

The development of effective control measures adapted to meet the various situations and farming practices throughout the country will require a good deal of research. What are some of the research needs?

(1) A fundamental research requirement is a better understanding of the ecology and seasonal history of the aphid under various farming conditions. This knowledge is basic for intelligent control recommendations.

(2) Another fundamental need is for resistant or immune varieties of alfalfa. Federal and state plant breeders are investigating this problem and advance reports are extremely encouraging. Several lines show resistance to the aphid. The task now is to cross this resistance with other clones or varieties adaptable to the various regions where alfalfa is grown.

(3) Better, more effective insecticides are required. A safe and medium persistent systemic would be desirable, also chemicals that are more effective under the low temperatures often prevailing at times of heavy population in the spring and fall.

(4) There is need for a better understanding of the relationship of native predators and parasites to the aphids and of the factors governing their abundance and effectiveness in reducing aphid populations.

(5) Continued search for and release of foreign parasites in all infested areas is desirable.

(6) Fundamental studies concerning the nature of the injury of the aphid should aid the plant breeding program and perhaps suggest ways of retaining the vigor and longevity of established stands.

One hopeful note to this entire aphid problem is the realization that in its native home across the ocean this insect is not often a serious pest. Apparently an equilibrium has been reached there between the insect and its environment, including its host plants, parasites, predators and diseases. We can look forward with confidence to such a situation in this country, too, when resistant, adaptable varieties and better control measures based on an understanding of the ecology and seasonal history of this serious pest become available to alfalfa growers.

Wyoming Scientists Continue Studies of Alfalfa Seed Failure

LARAMIE, WYO.—The 1956 alfalfa seed yield in the Riverton area of Wyoming was less than half of that produced from 1953 through 1955, according to University of Wyoming experiment station scientists. Studies made by the Wyoming agricultural experiment station have not shown any single cause to blame for the poor seedset. Continuing research is planned.

Experiment station scientists say that many things influence seed production—among them the plant itself, climate, insects, diseases, soil, weeds, and irrigation. A combination of several of these undoubtedly worked together, they believe, to cause the low seed yields suffered by Riverton alfalfa growers. They note that the growing season began earlier than usual, but for some reason the fields failed to bloom as they should.

The lygus bug deserves some blame but not all, says Dr. W. D. Fronk, station entomologist. Even where the lygus bug count was low, alfalfa did not show the over-all purple color of good blooming fields. The chemical, dieldrin, which has successfully controlled the lygus bug in past years, failed to reduce numbers of the insect last summer. Exactly why is not known.

Changing from dieldrin to DDT improved the bloom of some fields but they still failed to bloom or set seed as well as they had previously, Dr. Fronk says.

Bees do nearly all the pollinating of alfalfa flowers and thus contribute to good seedsets. Actual counts in Riverton fields showed one-third to one-fifth as many honey and alkali bees present in 1956 as were present in 1955.

During the season, pea aphids increased to large numbers in many fields.

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ADA CONVENTION PROGRAM

(Continued from page 1a)

gotten, either. Events scheduled for Jan. 31 will include golf, fishing and a plantation party.

The election of directors and officers is scheduled for the morning of Feb. 1. Present directors are: J. A. Alexander, Grayson Alfalfa Dehydrating Mills, Sherman, Texas; Ralph Beermann, Beermann Brothers Dehy, Dakota City, Neb.; Vernon C. Britton, V. C. Britton Co., Firebaugh, Cal.; John Caple, A. B. Caple Co., Toledo, Ohio; J. D. Cole, Cole Grain Co., Muskogee, Okla.; J. J. Dillard, Nebraska Alfalfa Farms, Inc., Lexington, Neb.; W. A. Donnelly, National Alfalfa Dehydrating & Milling Co., Lawrence, Kansas; Loyd M. Faris, the W. J. Small Co., division Archer-Daniels-Midland Co., Kansas City; Clifford S. Green, Green Products Co., Conrad, Iowa; R. P. Johnson, Elk Valley Alfalfa Mills, Independence, Kansas; Floyd McKennon, Snohomish, Wash.; Kenneth Morrison, Morrison & Quirk, Hastings, Neb.; Robert Pharo, Keystone Dehydrators, Nazareth, Pa.; Charlie R. Reyher, Reyher Milling Co., McClave, Colo., and C. E. Stower, Worthington (Minn.) Dehydrating Co.

Speakers' Roster

Among the government and college researchers scheduled to appear on the convention program are Dr. George O. Kohler, Western Utilization Research Branch, U.S. Department of Agriculture, Albany, Cal.; Dr. Hugo O. Graumann, research agronomist with the field crop research branch, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md.; Dr. L. E. Card, head of the animal science department, University of Illinois; Dr. J. Russell Couch, poultry husbandry department, Texas A&M College; Dr. Thomas W. Dowe, animal husbandry department, Unversity of Nebraska, and Dr. Leonard Schruben, agricultural economist, Kansas State College.

Industry speakers will include W. E. Behnke, Cereal Byproducts Co., Chicago; Erle Ellis, Hales & Hunter Co., Chicago, and Hal Lowther, Consolidated Business Services, Kansas City.

The first day of the convention, Jan. 31, has been set aside for a golf tournament at the hotel's golf course, and fishing in the Bay of Biloxi for those so inclined. At 6:30 p.m. a "plantation party" is scheduled. This event will include cocktails, a buffet dinner, entertainment and dancing to the music of "Papa" Celestin's orchestra from New Orleans. Members of allied industries are hosts at this party.

Mr. Morrison will open the program at 10 a.m. on Feb. 1 with a review of the year's activities. Dr. Card, chairman of the ADA Research Council, will talk on the progress made by his group. Dr. Kohler will provide the convention keynote and outline existing opportunities for dehydrators.

The annual banquet is slated for the night of Feb. 2. The master of ceremonies for a variety show will be Kelly Rand, formerly with Fred Waring's Pennsylvanians. Dancing will conclude the evening.

Convention Program

The ADA convention program follows:

Jan. 30: 9 a.m., registration—main lobby; 10 a.m., board of directors meeting, parlor D, lobby floor; 10 a.m., Research Council meeting, parlor F, lobby floor; 12:30 p.m., joint luncheon, board and council, ballroom; 2 p.m., board and council reconvene.

Jan. 31: 9 a.m., registration, main lobby; 10 a.m., golf tournament, Edgewater Gulf Hotel Course and fishing in Bay of Biloxi; 10 a.m.-5 p.m., hospitality room for ladies, parlors D and E; 6:30 p.m., plantation party: social hour, ballroom; buffet dinner, Marine dining room and ballroom.

Morning of Feb. 1: 10 a.m., convention called to order, ballroom: Kenneth Morrison, Morrison & Quirk, Hastings, Neb., presiding; invocation, the Rev. Clyde H. Gunn, First Methodist Church, Gulfport, Miss.; talk, "Our 1956 Program," Mr. Morrison; treasurer's report, committee reports and election of directors; 10:45 a.m., "New Horizons in Field Crops Utilization," Dr. George O. Kohler, U.S. Department of Agriculture, Albany, Cal.; "Research Beyond Teaching," Dr. L. E. Card, chairman, ADA Research Council; adjourn for lunch; 11:45 a.m., new board of directors meeting, parlor D.

Afternoon of Feb. 1: 12:30 p.m., new president's luncheon, James D. (Jimmy) Arrington, editor, Collins News-Commercial, speaker; 2 p.m., convention reassembles, ballroom: "What's New in Alfalfa Culture?" Dr. Hugo O. Graumann, USDA, Beltsville, Md.; "Who Determines Prices?", Dr. Leonard W. Schruben, Kansas State College; "Dehydrated Alfalfa in Beef Cattle Rations," Dr. Thomas W. Dowe, University of Nebraska.

Feb. 2: 9:30 a.m., "The First Five Minutes," fire insurance film; 10 a.m., "Family Security with Group Insurance," Don Rising, New York Life Insurance Co.; "New Developments on the Use of Dehydrated Alfalfa Meal in Poultry Rations," Dr. J. Russell Couch, Texas A&M College; "Dehydrators' Relationships with the Broker," William E. Behnke, Cereal Byproducts Co., Omaha; 12 noon, adjourn for lunch; 1:30 p.m., reconvene: "The Other Side," Erle Ellis, Hales & Hunter Co., Chicago; "Meeting the Challenge Through Better Selling," Hal Lowther, Consolidated Business Services, Inc., Kansas City; "What Have We Done? Where Do We Go?", Joseph Chrisman, executive vice president, ADA; 7 p.m., annual banquet for retiring president, variety show and dancing.

New Losses Likely

NEW YORK—That the spotted alfalfa aphid could become a pest of more than 30 small seeded legumes was reported at the recent annual meetings of the Entomological Society of America and the American Association for the Advancement of Science here.

The spotted alfalfa aphid and the yellow clover aphids have about 30 hosts among the 70 legumes, it was reported. These were from many groups, including the sweetclovers, yellow and ordinary white clovers, alfalfas, and relatives of these plants. In contrast, the sweetclover aphids were found to feed on only about 15 plants, which were all sweetclovers or near relatives.

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BULLISH ALFALFA MEAL MARKET

(Continued from page 1a)

Table 1—Dehydrated Alfalfa Production—Derived From USDA Figures

	1954-55	1955-56	Past 5 yr. average	1956-57	1956-57 Above (below) 5 yr. avg.	1956-57 Above (below) 1955-56
May	130,500	153,800	109,000	103,900	(5,100)	(49,900)
June	210,700	242,700	200,960	215,800	14,840	(26,900)
July	202,500	253,900	202,460	205,000	2,540	(48,900)
August	159,200	201,400	166,200	173,900	7,700	(27,500)
September	169,900	132,700	133,540	118,600	(14,940)	(14,100)
October	89,600	103,300	81,860	76,200	(5,660)	(27,100)
November	29,100	22,800	21,200	11,900*	(9,300)†	(10,900)†
First 7 mo. total	991,500	1,110,600	915,220	905,300†	(9,920)†	(205,300)†
December	9,200	5,000	8,500			
January	4,100	7,000	6,220			
February	8,900	6,300	11,840			
March	17,000	11,500	18,940			
April	32,800	18,700	28,240			
Five months' total	72,000	48,500	72,740			
Twelve months' total	1,063,500	1,159,100	988,960			
First 7 mo. % of 12 mo...	93.2	95.8	92.5			

*Preliminary figure. †Based on preliminary figure.

the same period. (See Table 2 on page 36a.)

A projection of the figures for the entire year, May through April, shows that if the percentages of past years are maintained, dehydrated alfalfa produced in the current year will be inadequate to meet the demands. This means that stocks on hand April 30, 1956, should be almost wiped out by April 30, 1957.

On production, if the 905,300 ton figure for the May-November period is projected on the basis of it being 94% of the year's production, the total production figure will be 963,085 tons.

A projection of the dehydrated alfalfa disappearance of 716,200 tons in the May-November period on the basis of it being 68% of the year's total, shows that disappearance will amount to 1,053,235 tons in the 1956-57 year.

Putting these figures against each other shows that the projected production in the current year is 90,150 tons less than the projected disappearance.

Stocks of dehydrated alfalfa on April 30, 1956, amounted to 111,400 tons, according to USDA figures. Thus, if nothing were present to throw the projections off, the industry should finish the year with a carryover of about 21,250 tons.

Additional Tightness Seen

However, there are factors that indicate projections of both production and disappearance might be off —too high for production and too low for disappearance—leading to an even tighter market situation.

Two factors could prevent this indicated tightness. One factor would be for production in the remaining five months to materially exceed that of the same period last year. However, inasmuch as production in November, 1956, is reported at 11,900 tons, compared with production of 22,800 tons in the same month last year, it seems unlikely that production will be up from last year.

The other factor which could change the expected clearance of stocks is the possibility of reduced disappearance in the remaining five months of the year. Countering this possibility is the fact that October and November disappearance figures exceed those for the same months a year ago—for the first months since April.

Even if production should increase greatly in California and Arizona during the winter months, it is unlikely that this material would move into eastern markets. Dehydrated alfalfa prices would have to go much higher in the Midwest and East before the western supplies, with their high freight rates, could compete. Some of the western material is presently moving into Texas and Oklahoma, but some dehydrators have had difficulty filling orders because of cold weather and heavy

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Table 2—Dehydrated Alfalfa Disappearance—Derived From USDA Figures

	1954-55	1955-56	Past 5 yr. average	1956-57	1956-57 Above (below) 5 yr. avg.	1956-57 Above (below) 1955-56
May	85,400	118,700	69,480	90,600	21,120	(28,100)
June	114,700	135,000	124,640	134,100	9,460	(900)
July	115,800	142,600	127,300	117,800	(9,500)	(24,800)
August	103,800	114,700	109,580	113,700	4,120	(1,000)
September	104,500	104,500	95,620	92,200	(3,420)	(12,300)
October	85,500	89,200	81,400	91,800	10,400	2,600
November	73,000	64,800	62,500	76,000*	13,500†	11,200†
Seven months' total	682,700	769,500	670,520	716,200†	45,680†	(53,300)†
December	68,700	86,800	62,140			
January	69,100	79,800	55,980			
February	53,100	65,600	53,080			
March	60,300	75,200	65,800			
April	69,900	83,000	63,100			
Five months' total	321,100	360,400	300,100			
Twelve months' total	1,003,800	1,129,900	970,620			
First 7 mo. % of 12 mo...	68.0	68.1	69.1			

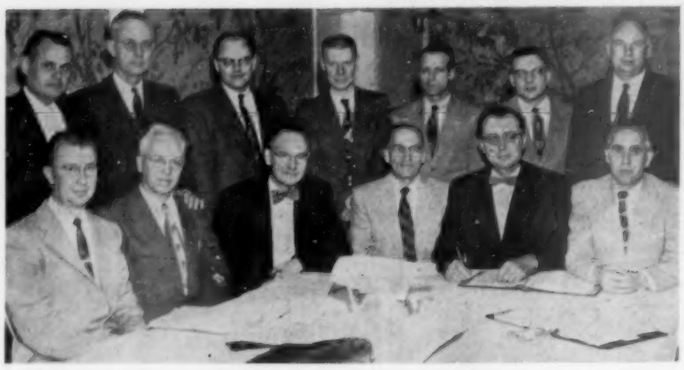
*Preliminary figure. †Based on preliminary figure.

rains during several periods. Another factor that weighs against the possibility of much dehydrated alfalfa meal moving out of the West is the large number of livestock now being raised in that area, animals that compete for the local supplies.

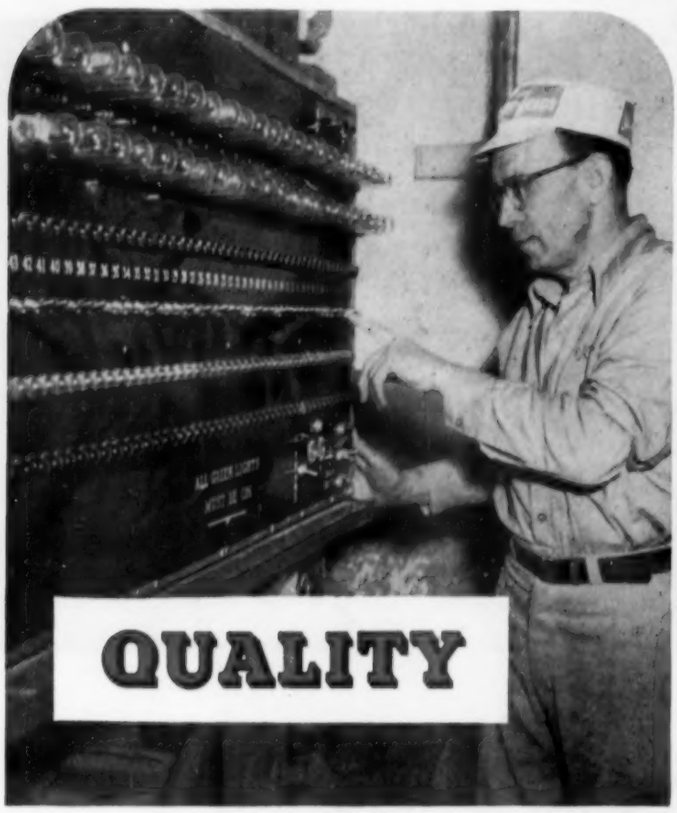
A reduction in disappearance of dehydrated alfalfa meal through a cutback in its usage in feeds is unlikely, some market analysts point out, because poultry feeds now carry about the minimum quantity for the desired effects on the poultry. Some dehydrated alfalfa meal is also moving directly from storage to feeders because of exhausted hay supplies in drouth-stricken areas, one of the reasons for increased disappearance in recent months, it is said.

The reduced quantity of fish oil (a source of vitamin A) this year is said by dehydrators to make the vitamin A in alfalfa meal more valuable, also.

All these factors seem to point to a bullish alfalfa market with the carryover expected to be virtually wiped out at the end of the year, April 30.



ADA RESEARCH COUNCIL—In charge of the research program for the American Dehydrators Assn. is the Research Council. This group is made up of college and industry research men. Members serve staggered terms. Above is the council which met during last year's ADA convention. From left to right in the back row are Dr. H. Ernest Bechtel, General Mills, Inc., Indianola, Iowa; Dr. H. O. Graumann, U.S. Department of Agriculture, Beltsville, Md.; Dr. George O. Kohler, USDA, Albany, Cal.; Dr. H. R. Bird, University of Wisconsin; Gordon Lindl, Arnold Dryer Co., division of the Heil Co., Milwaukee; Roy C. Elrod, W. J. Small Co., division of Archer-Daniels-Midland Co., Minneapolis; Dr. W. M. Beeson, Purdue University. Front row, left to right: Dr. C. Ray Thompson, USDA, Albany, Cal.; Dr. H. J. Almquist, the Grange Co., Modesto, Cal.; Dr. L. E. Card, University of Illinois, chairman; H. C. Schaefer, Ralston Purina Co., St. Louis, secretary; Dr. E. F. Frolik, University of Nebraska, and Dr. L. C. Cunningham, Cornell University. During the year, Dr. Almquist, Dr. Kohler and Mr. Lindl went off the council. Replacing them were the following, who will meet with the council for the first time just prior to the ADA convention: Dr. F. H. Bird, Eastern States Farmers Exchange, West Springfield, Mass.; Harry J. Konen, Uncle Johnny Mills, Houston, and Dr. H. S. Wilgus, Peter Hand Foundation, Chicago.



Every ingredient must meet research quality standards. Trained personnel, modern equipment and modern mixing methods help to insure uniformity. A numbered control-tag for each bag of feed, together with checking, testing and inspection all along the line are your assurance of top quality . . . year in and year out.

WIRTHMORE POULTRY DAIRY STOCK FEEDS

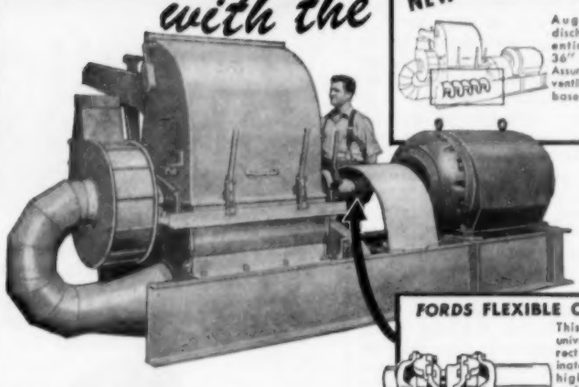
WIRTHMORE

The Big Name in Farm Feeds

WIRTHMORE FEEDS, Malden 48, Mass.

COOLER ALFALFA MEAL DIRECT FROM FORDS HAMMERMILLS with the

NEW "COOLER ZONE" Auger-Blower discharge keeps entire width of 36" screen clear. Assures maximum ventilation in mill base.



FORDS FLEXIBLE COUPLING This special double universal joint for direct driving mills eliminates the need for high cost machined surface alignment and heavy cast bases—gives greater bearing protection.

FOR DEHYDRATORS

FORDS 36" HAMMERMILL, with the new "COOLER-ZONE," utilizes a greater volume of cool air through the 954 sq. in. open throat intake construction, plus controlled ventilation of the mill base which draws in cool air directly under the screen and through the grind while material is in suspension.

The high head, open throat takes loose or baled hay with equal ease. FORDS utilize all-welded boiler plate construction, dynamically balanced rotor, and direct-drive blower fan to minimize destructive vibration, reduce power consumption, and increase output.

OUR GUARANTEE

FORDS 36" FINISHING MILL will produce More Meal at lower per ton cost for as many trouble-free years as equipment costing two to three times as much.

FORDS THORO-MIX MOLASSES BLENDER

Can be fed from hopper or at any angle from batch mixer. Mixes up to 50% molasses without balling or lumping. Capacities up to 6 tons per hr. Designed for easy cleaning.

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Vertical Feed Mixer — "Corn Master" Sheller — Pneumatic Pellet and Grain-Vayor

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Whatever your Feed Fortification needs

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NIACIN
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RIBOFLAVIN
BHT
VITAMIN B_{12}
PROCAINE PENICILLIN
B-COMPLEX MIXES
DRY D_2
MINERAL STABLE D_3
PANTOTHENIC ACID
CHOLINE CHLORIDE

Fortify with Dawe's Choline Chloride. Make sure choline is not a limiting factor in the performance of your poultry and swine feeds. It is essential to vital body functions, to efficient feed conversion and overall health and productivity throughout the life cycle.

The trend is to increased choline fortification of modern-day feeds. Choline levels formerly adequate may not be sufficient for today's high-energy feeds. More Dawe's Choline Chloride is being used by the feed industry than ever before.

Dawe's Choline Chloride 25%: A dry feed supplement containing 25% choline chloride on powdered cereal carrier. Particle size is ideal for thorough dispersion. It is completely free-flowing, non-sticky and handles well in either batch or continuous mixing operations.

Dawe's Choline Chloride 70%: An aqueous solution . . . water clear and non-corrosive . . . for those who prefer this concentration of choline chloride and are equipped to supplement their formulas with liquids.

Dawe's, a primary producer of choline chloride, exercises complete quality control all the way from the raw components of manufacture to the finished product. It meets the highest standards of potency, purity and stability with generous safety margins.

For all individual vitamins and related factors, or for combinations custom-blended and packaged to your specifications, consult Dawe's—fortification specialists serving the feed industry exclusively.

Dawe's Laboratories, Inc.

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Offices and warehouse stocks: Belgium—13, Courte rue des Claires, Antwerp. Mexico—Sierra Leona 755, Mexico 10, D. F.

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Founded 1852
MINNEAPOLIS DULUTH

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Ask us!
PERCY KENT BAG COMPANY, INC.
KANSAS CITY • BUFFALO • NEW YORK

North Carolina Total Feed Tonnage Higher

RALEIGH, N.C.—The total feed tonnage in November in North Carolina reported by state officials was 106,182 tons, a decline from the 113,457 tons of the previous month. It was considerably above the 96,963 tons of November, 1955.

Total tons shipped during the 1956-57 fiscal year are 510,105 compared with 478,049 for the same period last year.

RECORD REGISTRATIONS

PINE PLAINS, N.Y.—For the first time in history of all breed registrations, total registrations for one year exceeded the 200,000 animal total. The mark was reached in 1956 for the Holstein breed, according to the Holstein-Friesian Association of America, Pine Plains, N.Y.

Marshall Rutherford

APPOINTED — Marshall Rutherford has been appointed poultry specialist at Burrus Feed Mills, Ft. Worth, according to co-managers, Wesley Ballman and Charles Harris. Mr. Rutherford will assist customers, dealers and salesmen with poultry feeding and management problems. He will also be in charge of Burrus' poultry finance program. It is expected that he will spend most of his time in the field, though he will maintain offices at the firm's Saginaw plant. He is a graduate of Texas A&M College and was previously employed by Kazmeier-Sherrill Hatchery, Bryant, Texas. He joined Burrus two years ago.

New Mexico Events

STATE COLLEGE, N. M.—Two annual livestock events, for feeders and range cattle producers, are scheduled for February at New Mexico A&M College. The 18th annual Feeders Day will be held Feb. 18, followed by the second annual Cattle Breeders School Feb. 19-20. The feeders day program will include reports on feeding experiments and evaluation of feeds.

In Canada it's . . .
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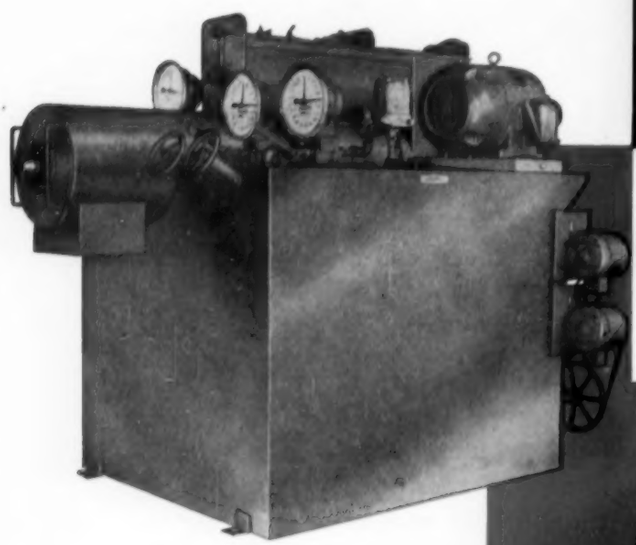
TORONTO, ONT., CANADA

Wenger Introduces
Its NEW Multi-Blender MIXERS
Applies up to 4 different Liquid Feed Ingredients simultaneously or individually or in any combination.



Model illustrated is 1275 Series Multi-Blender with capacities to 40-Tons per hour. Also available: 750 Series Multi-Blenders (capacities to 15-Tons) and 700 Series Multi-Blenders (capacities to 7-Tons per hour).

Mix Molasses, Animal Fats, Fish Solubles, Fermentation Solubles, Liquid Whey, Molasses-Urea Mixtures, etc.

In the 1275 Packaged Unit Multi-Blender, Wenger introduces a basic new feed milling unit—a mixer large enough to handle the capacity of even your largest mixing lines, and able to apply several liquids simultaneously or individually, in any percentage required by your formulas.

Every formula produced may be handled in this single packaged unit, with assurance of a perfectly homogenous mix of each liquid or combination of liquids in every particle of your feeds without balling or lumping—your assurance of a perfectly uniform mix of every liquid used.

Here is a complete packaged continuous liquid mixing unit with a 725-gallon tank which can be divided into 2, 3 or 4 compartments depending on your needs. Each compartment is equipped with Wenger Metered Flow Pump, built-in heating coils, automatic steam regulator valves and automatic liquid level controls. Feeder equipped with Variable Speed Motorized Drive. Model illustrated feeds from single hoppered bin. However, oversized feeder available which will feed premixed dry feeds from either of two overhead bins, hence eliminating changeover time losses with each formula change.

Another example of Wenger's creative engineering to meet the needs of the feed industry with a single unit which can handle all your liquid mixing requirements.

Write Today—

for complete information, stating the types of feed, tonnage desired, liquid feed ingredients required and the maximum percentages of each liquid wanted.

Wenger Mixer Mfg. Co.
SABETHA, KANSAS Phone 111
Standard of the Industry for Molasses Feed Mixing, Pelleting and Cooling Equipment.

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The Broker's Relationship With the Dehydrated Alfalfa Industry

By W. E. Behnke
Cereal Byproducts Co.

EDITOR'S NOTE: In the accompanying article, Mr. Behnke outlines the primary functions of the broker dealing with dehydrated alfalfa. The article is an excerpt from a paper prepared by the author for delivery at the American Dehydrators Association's meeting. Mr. Behnke is a broker with the Cereal Byproducts Co.

v v

A broker's position is a delicate one because he is dealing with both buyers and sellers and must maintain the respect of both.

These thoughts are expressed not to please everybody but are intended to be constructive criticism. I hope you will bear in mind that I might be equally critical with the methods used by other facets of the feed industry.

Brokers are traditionally scapegoats and are blamed for just about everything that goes wrong. It is very convenient for buyers and sellers to mutually agree that it was the broker who did it, but they themselves are blameless. I don't mean by this that brokers never make a mistake, the only point I'm trying to get across is that we don't make all of them.

First I'd like to point out what a broker is. The word broker is used many times by both suppliers and users of feed ingredients to include almost all middlemen. This is not an accurate description. A broker is a middleman that brings a buyer and seller together, at a price, and receives a commission for doing this. A good broker is one that brings the buyer and seller together at the market price. A broker does not take title to the merchandise. He makes no speculative profit. He does not get more than the market price, or he has offended his buyer, and this buyer will not be inclined to buy from him again; neither can he sell your product under the market, or he's in Dutch with you. To do a successful job, the broker must know the market price, and know who is a buyer and who is a seller. The subject of market price is a tenuous and complex one.

Brokers Facilitate Movement

The primary function of a broker is to facilitate the movement of dehydrated alfalfa from producer to user. This is the main reason for his existence. A real service must be performed by the broker, and the extent to which the broker performs this service will govern his value to the dehydrator and in the long run determine if he is to remain in business.

The key to the service that the broker performs is correct market information. This involves not only knowing the price but knowing where to sell and buy. This information is not easily obtained, but involves an extensive amount of work and expenditure of time and money. Every time you, as a seller or a buyer, ask a broker what is the market, the broker is relaying information to you that has involved hours of work on the part of a good many people, and expenditure of considerable money involved in the high cost of communication expenses.

How many times have you talked to a broker and used the information you have received to accept or reject someone else's bid? Many times have some buyers used a broker's information about prices to buy or not to buy from some dehydrator to whom he may have been talking.

The service that is performed by a broker goes much of the time unrewarded, but eventually, if the broker is diligently and truthfully performing this service, he will be recognized and used by both buyers and sellers and he will be used by both buyers and sellers as long as he continues to perform this service.

This all boils down to the fact that a broker who is performing the service that he is supposed to perform will be used by buyers and sellers because they find it more profitable and convenient to do so. In performing this service, the broker must disseminate truthful and accurate market and pricing information to both parties, and consummate a trade in such a manner that neither principal could have accomplished as conveniently or economically or both.

As a result of my association with your industry, I have become firmly convinced that a competent broker can perform the service of expediting the movement of dehydrated alfalfa products from the producer to the consumer at less cost than is possible by any alternative method.

This brings us back to a discussion

ELAM
GRAIN COMPANY
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CAPACITY 2,500,000 Bus.
FIRST PUBLIC STORAGE
SOFT FEED INGREDIENTS
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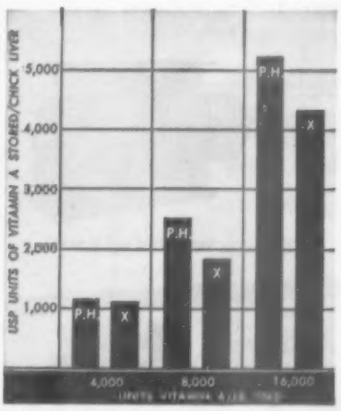
Because stability alone is not enough—
PETER HAND DRY A
gives you
STABILITY PLUS AVAILABILITY
to help your feeds produce top results

Of course your customers expect the vitamin content of your feeds to retain potency during storage—in the presence of heat, moisture, and trace minerals—in fact, right up to the moment of feeding. And *you* expect the same stability after pelleting—as well as complete dispersibility in the feed.

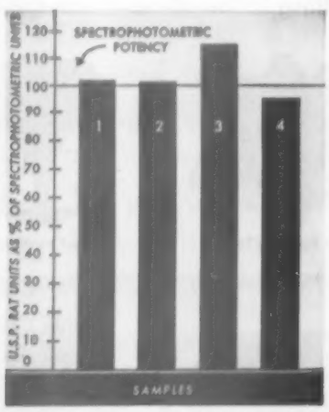
And the Peter Hand Foundation gives you these fine qualities in its Dry Vitamin A—and more, too. The vitamins you put into your mixes could stand up to pressure, heat and moisture till the cows come home—but they must also be readily assimilated by the animals that consume them.

And so, Peter Hand has made sure of complete AVAILABILITY in its new and improved Dry A. Peter Hand Foundation's research staff approved the product only after exhaustive feeding and laboratory tests proved conclusively its stability and availability characteristics.

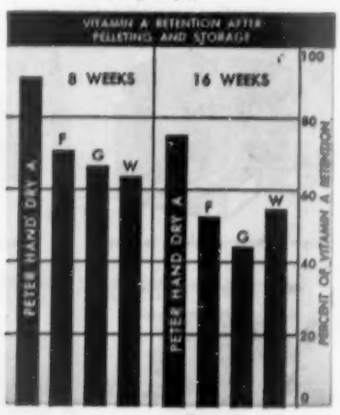
OTHER PETER HAND PRODUCTS
Dry D_3 and D_2 ● Vitamin B Blends
Vitamin B_{12} ● Antibiotics
Vitamin E ● BHT



Peter Hand A possesses more biological activity than a major competitive dry "Stable" product "X"—demonstrated in chick liver storage tests.



Peter Hand A possesses full biological activity: U.S.P. rat assays and rat liver storage assays agree with spectrophotometric assays.



The graph shows the % A retained during pelleting and storage. Products F, G, & W are the best obtainable competitive coated products.

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DIVISION PETER HAND BREWERY CO.
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of just what is the market price. Theoretically it is the price at which your product sells at a given instant of time. Actually, it may vary geographically because no person is capable of knowing exactly what conditions exist over the entire country at a given instant. This is where your broker can really perform a service. His knowledge will not be perfect, but if he's any good he'll be alert to the various changes in demand that take place in different geographical areas. It may be that you really need to sell; however, demand in your normal area is poor, but demand in Ohio or the East is good or perhaps the best interest is coming from other directions. The alert broker needs to know this. The extent to which he is informed is a measure of his value to you and to the feed buyer. This matter of the market price is an elusive and difficult matter of judgment, and at best, is a calculated guess on the basis of the best information obtainable. Your broker needs to supply you with this information so you can arrive at a sound decision on what price you can get for your product.

The dehydrated alfalfa industry has recently passed through a period of rapid technological advances in manufacturing, processing and storage techniques, that have, to a degree, modified the actual nature of your product. The product is not now, for the most part, a perishable one at the manufacturing level. This fact, although commonly known, is not completely understood, and seems to have been given little thought by some members of the industry. Your industry has passed through its adolescent stage and is now becoming an adult. It is maturing in its production and storage techniques, but there still remains much to be done.

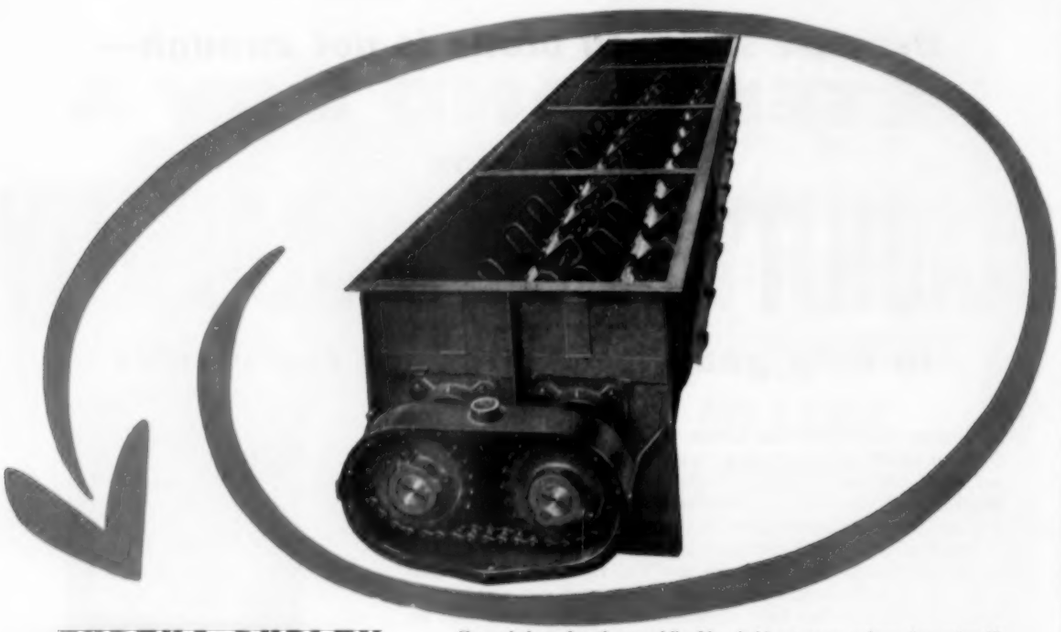
Disharmony Present

Production and storage techniques have advanced faster than management and sales techniques, and as a result, there is disharmony, not only in your relations with each other, but with the feed industry.

Have you ever stopped to think why the feed industry accepts as a common practice, the purchase of its alfalfa requirements for a 12-month period on a p.d.s. basis, when it seldom, if ever, buys any of the other ingredients it uses in this fashion? Perhaps you have thought it was your superior sales ability or personal charm. I assure you this is not the case. The plain, unvarnished truth, if you want to accept it, is not very flattering. The feed mixer was just plain so afraid of the unstable behavior of the alfalfa market that he was concerned about being able to obtain your product when he needed it. He didn't know from one month to the next just what you people were going to do. The industry wallows around with a surplus and prices below production costs, and 60 days later there is a scarcity and dehydrated alfalfa prices are approaching a point where some mixers feel impelled to take it out of their formulas. No wonder the feed mixer seems to resent a price advance in dehydrated alfalfa meal of $2 and may not say a word when soybean meal, or millfeed, advances. This is all very complimentary to your product, but not very complimentary to your methods.

Paradox

This brings us to the point of discussing your product and to a paradox. In my conversations with many dehydrators, I have detected a strange attitude. It is not expressed in words, but seems to be an unwarranted modesty about the value of your product. I have no explanation



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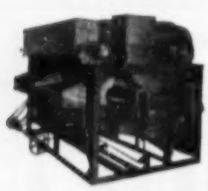
Conceded to be the world's No. 1 hi-accuracy mixer for scientific blending of varied products. Perfect mixing range from light, dry ingredients to heavy, dense materials. New Eureka "Patented" loop paddle agitator produces the most thorough blend or mix, regardless of percentages, in the shortest period of time and with the least amount of power. Materials are in constant suspension, cannot stratify. Various types of discharge gates available, including new contour type slide gates—manual or air operated. Write for Catalog 165-HB.



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Corn Cutters and Graders

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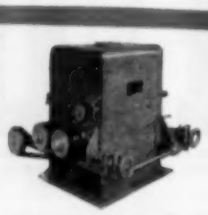
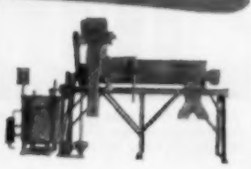
Horizontal Batch Mixer



Cut Crimper—Single Pair Roller Mill



Duplex Agitator Molasses Mixer

The Eureka trademark in Flour, Feed, Seed, Grain and Cereal Machinery and Equipment is like the Continental *Mark II* in cars. It's the recognized symbol of a superior product.

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no more dropping . . .

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WHEN YOU PACKAGE IN BEMIS HANDLE BAGS

What a sales-builder!

Customers will *reach first* for your products when you package in the new Bemis HANDLE BAGS. This new merchandising package has been thoroughly sales-tested and has proved it moves goods . . . *fast.* Dog food, salt, peat moss . . . actually, just about anything you would package in bags up to 25- or 30-lb. capacity.

The wonderful convenience of the handle does it. Grab that handle . . . and away you go.

Ask your Bemis Man for the complete Handle Bag story.

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for this, except perhaps that you have listened to the feed buyers complain to you so often during so many years, that you begin to feel there is something wrong with your product. These people haven't been critical of dehydrated alfalfa, they have been critical of you. I don't think you need to apologize for any product that the feed mixer is so desirous of obtaining, that he customarily purchases his year's requirements on an open price sort of blank check arrangement. I can't think of any other ingredient used in the quantities that dehydrated alfalfa is used where this sort of buying is the practice.

Much of the criticism that the industry received from the feed trade is perhaps caused by the unusual position in which the feed buyer finds himself in relationship to his alfalfa purchases. I suspect it rather irritates him to have to buy your product on an open price contract, because it gives him a feeling of helplessness and little control over his costs. It's only natural and human that he will find something to complain about when what appears to him to be rather arbitrary advances in price take place, and he does not have much sympathy with you when you go through periods of prices below your costs.

This leads us back to a point mentioned earlier: The changed nature of dehydrated alfalfa since the advent of inert gas storage. It's almost an entirely new product now, basically better in its form and nutritive values with the problem of perishability almost solved. Carry-overs from one year to the next are not the disaster they once were. If you as individuals can exert some control over production, a much more orderly marketing procedure should be possible. If you are going to manufacture 100,000 tons more than is required each year, then no one can help you. If the drouth and aphid continue to spread, then you will have more problems, but in spite of these, the production and storage techniques are known and available to all. They exist and are there for foresighted men to use and to achieve an orderly industry.

If the drouth and alfalfa aphid can be licked, and we are all hopeful they will be, it should not be a problem to produce sufficient dehydrated alfalfa to meet the demands of your buyers, even including the new and promising outlets in direct feeding to animals. The time seems to be fast approaching with the increased building of inert gas storage when the feed mixer-buyer will not feel so insecure in obtaining your product and will not find it as necessary to contract on a price date of shipment basis. Although some of you may dread this day, it might be the best thing that has ever happened to the industry.

More Stability Possible

The market price of dehydrated alfalfa doesn't change once a month, or twice a month, or once a week, it changes constantly. I think it will surprise you if the day should come when the law of supply and demand follows a natural course. It is possible, if this occurs, that many of your big problems will be solved. The feed men will be less critical and your product will assume a more stable place alongside the other basic feed ingredients as a needed, useful contribution to the feed manufacturing industry.

There has been a real need for p.d.s. contracts in your industry and they have served a very useful purpose. I hope that you do not take the above criticism to mean that I believe that p.d.s. contracts are the cause of all your troubles. It isn't

Up Go Sales And Profits When You Sell

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THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

GRAN-I-GRIT HAS EYE APPEAL
You are looking ahead to your future business profits when you sell the BEST Poultry Grit . . . because the best poultry grit will repeat in ever increasing volume for you. That's why GRAN-I-GRIT sales increase for Jobbers and Dealers year after year.
Poultry must consume Grit for it to be of value and Grit MUST HAVE AN EYE APPEAL for poultry to eat it.
Side by side tests on poultry farms and by leading poultry authorities have proven that chickens and turkeys of all ages prefer a light gray grit with black specks . . . The GRAN-I-GRIT TYPE . . . AS MUCH AS TEN, FIFTEEN AND EVEN ONE HUNDRED TO ONE over grit of other colors.
When poultry raisers know this fact they insist on GRAN-I-GRIT.

GRINDS FEED FINER
GRAN-I-GRIT with the sharpest grinding edges ever cut grinds feed finer in the gizzard. Finer grinding of feed releases more nutrients for every pound of feed consumed.

BETTER USE OF FEED
These EXTRA valuable body building nutrients that GRAN-I-GRIT gives you are a great aid in speeding growth, body development and weight gains of broilers and in getting EXTRA EGGS from layers through more profitable feed conversion.

USED BY LEADING POULTRY BREEDERS
They know from experience how GRAN-I-GRIT helps improve livability of chicks, growing stock and layers . . . and how GRAN-I-GRIT's New King Size Feeder Pack is unbeatable where birds are separated into pens.

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SELF FEEDING GRIT UNITS PROVING POPULAR
Your Grit sales and profits go up when you Display-Feature and Sell our New King Size, Easy to Stack, Self Feeding GRAN-I-GRIT Feeder Pack. It Saves Poultry Raisers, Dealers and Jobbers both Time and Labor handling heavy bags and releases valuable storage space.
GRAN-I-GRIT is packed in 10 lb. and King Size (App. 22 Lbs.) Feeder Packs and 25, 50, 80 lb. bags.

GET THE FACTS
Take time out today and write for full details on GRAN-I-GRIT retail and jobber opportunities that increase your grit profits.

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the contract that I'm critical of, but rather the conditions that exist which cause this type of contract to be the predominant method used in selling the alfalfa product.

In view of the fact that the dehydrated alfalfa product you are now making is not the same product you made in 1950, the management and sales techniques that served you so well five or ten years ago are no longer adequate. Instead of clinging to past methods you should be developing new sales methods.

The early dream of your industry to furnish the feed manufacturer a uniform product with guaranteed vitamin A 12 months of the year can now be fulfilled. The methods and means are known and available to all. It remains for management to meet the challenge. It appears to me that the industry is still trying to fit successful sales techniques of past years to the years 1957 and forward, instead of developing newer sales techniques that fit your changed conditions. One approach to the problem might be an improved broker-dehydrator relationship.

Confidence in Broker

How best can you use your broker? I believe this single fact will help you and him very much. You should select a broker in whom you have confidence. Consider him your broker and give him enough information about your sales plan so that he can work for you intelligently. This works two ways because the broker can feed back to you market information that will permit you to form more accurate sales decisions.

If a producer should suddenly find it necessary to move a few cars, he certainly doesn't want to turn the market against himself. If the news is broadcast through too many channels, the impression is very quickly created that a burdensome supply of meal is in the market. Maybe there are only a few cars involved, but it soon becomes many cars.

You must have faith in someone so help yourself and the industry by confiding your problem to your broker and expect him to do a proper job of representing you.

I have noted that many of the independent producers are more interested in production and equipment problems than in sales and pricing problems. This is not good business sense.

The amount of money you receive for your product is of prime importance to you. An intelligent sales program is a must in this highly competitive business not only for your own good but for the good of the entire industry. There is only one way that you can make intelligent sales decisions. That is by knowing what the market conditions are and what conditions are operating that will affect them in the future. An alert broker can be very helpful to you in giving you a picture of both the demand and supply side. You then will be able to arive at more accurate decisions concerning the sales of your product.

Keep this uppermost in your mind: The broker, the blenders, the buyers do not set your market. The market price is determined by a complex operation of the law of supply and demand. Every time you sell a carload, you help to establish a market price, and remember that every trade that is completed was made at a price some dehydrator was willing to accept. No broker or buyer forced him to take it. The decision was his. It was either a good or bad decision depending on how well the dehydrator was informed. No matter how good a broker may be, he cannot perform the impossible. There are times when market conditions are weak. The broker can tell you approximately what the market is, but he can exert no influence in changing it. You should expect your broker to be able to sell for you at the market; you should not expect him to do more. If the market price is not to your liking, blaming the broker is not going to help it, although it probably helps you to let off a little steam.

DOW APPOINTMENT

MIDLAND, MICH.—Dr. David H. Morgan, former president of Texas A&M College, has been appointed director of college relations for the Dow Chemical Co., Leland I. Doan, Dow president, has announced. An important function of the post will involve liaison with institutions of higher learning to encourage industry-education cooperation for the advancement of science and engineering and to stimulate student interest in the various scientific fields.

Operating efficiency begins with basic plant layout. You'll like the way Ibberson works with you, applying the know-how of 70 years of experience to arrive at the most practical and economical plan to fit your particular requirements.

Hubbard Milling Co. Feed Plant, Marion, Ind.

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YOU NAME IT... If It's Worth While NOPCOSOL® HAS IT

Nopcosols are blended supplements for fortifying feeds. They contain necessary vitamins, antibiotics, medicinals, trace minerals, and an amino acid

Pre-Mixed for You

Nopcosols are designed to be of real value to every feed manufacturer. Our customer list includes every type, large and small. Perhaps the majority are medium and small-size mills — those who do not have their own nutritionists and laboratory facilities, but nevertheless want supplements that are absolutely trustworthy with respect to nutritional adequacy, vitamin stability, and compatibility.

Potency Unimpaired

That's what you get with Nopcosols. They contain Micratized® Vitamins A and D, and every test has proved them stable beyond a question of a doubt — even in the face of trace minerals.

Compatibility

With Nopcosols, you get Nopco know-how — the expert services of trained nutritionists with a solid background of years of laboratory and field study.

We helped pioneer the modern science of feed fortification, and Nopcosols are a fruit of this experience.

Guaranteed

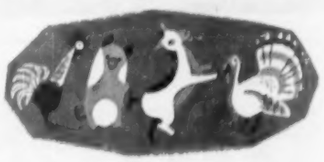
As a matter of fact, we are so confident of the value of Nopcosols that we give you an unprecedented guarantee. Nopcosols are *guaranteed stable when made, when mixed, when fed* — the only such guarantee in the industry!

Ultramodern Fortification

Stability isn't the only advantage of Nopcosols. The formulas are continually reviewed in order to make sure that they do not ever lag behind the advance of progress. As a result, you can depend on Nopcosols to include whatever new ingredients have proved their value.

Convenience

Nopcosols are not only nutritionally sound, they are also mighty convenient. Each Nopcosol is packed in batch-sized bags. Just empty a bag into a batch of feed in the mixer and pull the switch. Each mixer load is accurately and economically fortified. The greenest mill hand can do an expert job. No overfortification — just right every time!



You Name It... If It's Worth While Nopcosol Has It!

There's a nutrition-packed Nopcosol for every need — for starters, broilers, growers, layers, and breeders; for turkey starters, breeders, and growers; for swine, cattle, sheep, and goats. Have a talk with your Nopcosol man. He can simplify your fortification problems and help you build up a list of permanently satisfied customers.

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HOUSTON, TEXAS

UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

Concentrates Consumed by Livestock

In the planning of feed manufacturing operations, it frequently is helpful to refer to long-time trends. These trends can be helpful in deciding your management policy as well as day-to-day operating decisions. In this article, trends in protein production are described for your use.

The trend of production of high protein feeds has been decidedly upward since the mid 1930's as is shown on the accompanying chart. Exhibit 1 shows the high-protein feed supply in the U.S. for the feed year beginning in October from 1926 to the present time, figured on a soybean meal equivalent basis. Practically all of the expansion, or at least a major portion of the expansion, has come in the increase in oilseed meals, primarily soybean meal. In recent years the high protein supply has reached almost 12½ million tons per year, soybean meal equivalent, whereas 25 years ago the supply was barely 4½ million tons.

This increased use of high protein is a reflection of our changing technology in livestock production. It also is a reflection of the growth of the manufactured feed business inasmuch as many livestock feeders depend upon feed manufacturers to supply them with balanced supplements.

Exhibit 2 shows the percent of total tons of concentrates consumed by livestock in the form of by-product feeds, grains other than corn, and in corn. About 60% of all feed concentrates consumed by livestock in the U.S. is corn. The other percentages are divided almost equally between by-product feeds and grains other than corn.

It is of interest to the feed trade to note the increased use, percentage-wise, of by-product feeds. This increase has come about to a considerable extent by the increase in the high-protein feeds used. Much of this high protein feed has been supplied by the commercial feed manufacturer.

Although the prediction of future trends of almost any economic activity is hazardous, it would seem reasonable that we can expect continuation for at least some years of the upward trend in the utilization of high-protein feeds. Because of the advancing technology of animal production it appears reasonable also to assume that a high proportion of these feeds, at least in some categories not now having reached the saturation point, will be supplied by the commercial feed manufacturer.

EXHIBIT 1. High-protein feed supply (soybean meal equivalent), U.S., year beginning October, 1926-56.

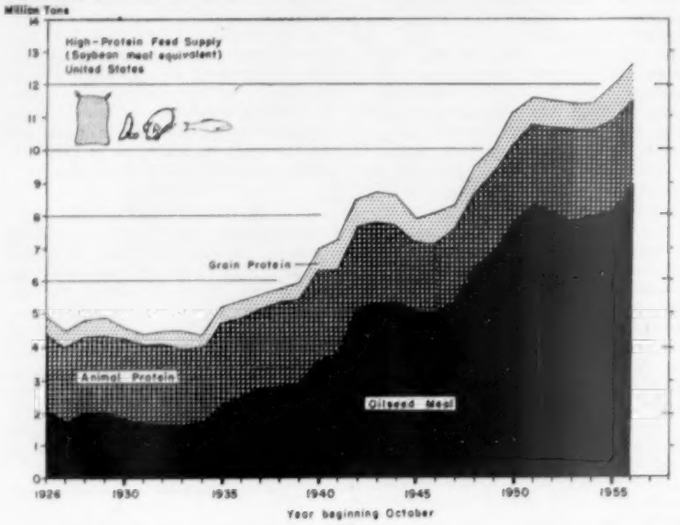
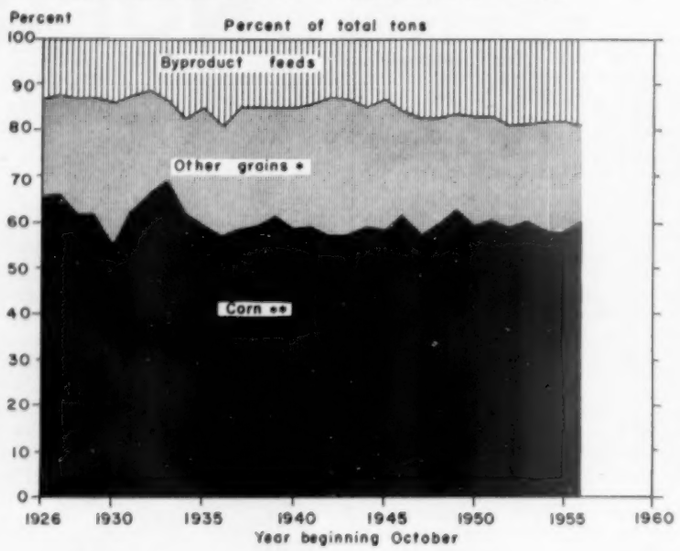


EXHIBIT 2. Feed concentrates consumed by livestock, U.S., year beginning October, 1926-56.



* Oats, barley, sorghum grains, wheat, and rye.
** Including grain, silage, forage, hogged off, etc.

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And EGGSHELL BRAND Oyster Shells positively tops all common substitutes for digestibility.

Tests prove that these pure, soft reef shells turn into egg shells in as little as 6 hours after consumption.

Substitutes just aren't as soft or as palatable as pure reef EGGSHELL BRAND Oyster Shells. High-producing layers need as much oyster shells as they will eat, and even ordinary hens eating 4 pounds of shells a year can produce as many as 24 **extra** eggs.

Insist on the shells softened by centuries of ageing at the bottom of Mobile Bay, the shells known for **digestibility**—EGGSHELL BRAND Oyster Shells.

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BOOST THE SALE OF YOUR FEEDS

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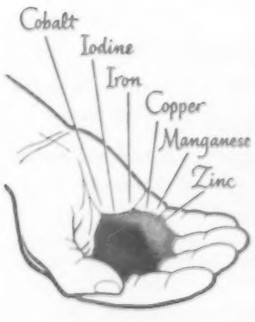

Morton T-M Salt can help you sell more livestock feed . . . and putting it to work as your "*salesman*" is simple. Just sell your customers on the idea of feeding Morton T-M Salt to all their livestock, free choice. When they do, your feeds will give your farmers better results . . . *and that is what brings them back as steady customers.*

Recommend Morton T-M Salt as an easy, economical way for livestock men to be sure their animals get the essential trace minerals. Morton uses all the top quality compounds that research has shown are the best available sources of trace minerals, as follows:

3,5-Di-Iodosalicylic Acid (a superior non-leaching form of iodine for outdoor feeding); **Cobalt Oxide** (an approved source of Cobalt); **Copper Oxide** (best source of Copper); **Manganoferro Phosphate** (unparalleled source of more available Manganese and Iron); **Ferrous Carbonate** (source of additional Iron); **Zinc Oxide** (an approved source of Zinc).

And only Morton T-M Salt has Propylene Glycol added—a superior anti-dusting, anti-segregating agent patented for use by the Morton Salt Company. It keeps the trace minerals *evenly distributed* in the salt.

Sell Morton Trace-Mineralized Salt and you'll sell more feed. You will gain extra profit both ways.

Do you also mix feed? If so, ask your Morton salesman about Morton mixing salts—the finest available.

Morton is the name that sells salt for you! Powerful, consistent Morton Salt advertising reaches practically everyone in the nation. Livestock men read about Morton T-M Salt in their favorite farm publications. They hear Morton sales messages every Saturday noontime on Alex Dreier's radio show, "Topic for Today" (immediately following the "Farm and Home Hour"). The womenfolk have known the little Morton girl with the umbrella all their lives. Thus, when you recommend Morton T-M Salt to any customer he knows you are recommending the finest product of its kind.

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BEET PULP
AND 44 OTHER FEEDS

Opinions Sought on Possible Value of Poultry Output Curbs

TRENTON, N.J. — Industry opinions on the possible value of poultry production controls are being sought by the Northeastern Poultry Producers Council.

The council has always supported free enterprise, but, with new developments and trends in the poultry industry, NEPPCO is asking for opinions on possible control plans with the idea that its policy may be changed.

Presented for consideration in a recent issue of the NEPPCO News were seven possible plans. In this connection, the question is raised as to whether the industry now needs some sort of protection because of the changes in the poultry picture.

The seven plans upon which men in the industry were asked to express opinions are:

1. Holding to an entirely free market, opposing any controls or government subsidies.

2. A free market, but possibly including government insurance against "disaster," at around 60% of parity, and school lunch turkey buying, etc., in times of low prices.

3. A "modified" free market, including some integration, with financing agencies or firms gradually taking over control of production.

4. Government production control to some extent; the system would be directed by producers and the idea would be to maintain prices by keeping supplies down.

5. A regular government support and control program, with government buying and production control in a way similar to that for wheat and other crops.

6. Direct payments to producers of the difference between parity and the market price, with controls on production or marketing.

7. Complete government regulation.

TEXAS-SIZE CHECK—M. C. Small, executive secretary of the National Turkey Federation is shown accepting a check for $8,880 for turkey promotion from Texas contributors. Presenting it is Suzy McCarthy, Ft. Worth, recently named turkey queen by the Texas Turkey Federation. The national organization at its recent convention announced plans to spend more than $150,000 on promotion in the year ahead. A total of $70,000 already has been contributed by state associations.

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NOW YOU CAN *Panogenize* SEED IN YOUR Mist-O-Matic, SLURRY OR DUST TREATER

YES, whether your seed treating equipment is liquid, slurry, or dust treatment, this year you can switch to PANOGEN.

Liquid PANOGEN can be used straight from the drum for direct treatment if you have a PANOGEN or MIST-O-MATIC treater. It "takes the worry out of slurry" for those who own slurry treaters, mixing readily with water to form a stable solution which will not settle out, and PANOGEN costs you no more than old-fashioned treating materials.

And now your PANOGEN *distributor can provide a special low cost (less than $40) attachment for dust treaters which quickly converts them for the modern* PANOGEN PROCESS *of seed treating.* You apply PANOGEN directly to seed as in direct treatment.

This versatility makes PANOGEN available to all custom treaters. There's no unpleasant mercury dust, no hard-to-clean-out sediment. There's far less work when you treat seed with PANOGEN liquid . . . *but substantially increased business.*

Yes, more business and more profit because farmers want *Panogenized* seed. They know that PANOGEN is the only liquid seed disinfectant that's widely recommended by agricultural colleges from coast to coast. It controls many seed and soil borne diseases in cotton, wheat, oats, barley, flax, rice, and other crops . . . gives better germination, healthier stands, better yields.

So . . . you'll treat more bushels when you switch to PANOGEN (because more farmers ask for *Panogenized* seed) and you'll make a better profit margin (because PANOGEN dosages are so accurate). This year, treat with the 18-years proven PANOGEN liquid seed disinfectant.

For further information write:

Panogen INC.
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Here's Nutrena's Business-Dealer Formula!

1. Develop "Leader" Feeds
2. Promote those feeds hard
3. Back our dealers to the hilt

Get full information on Nutrena's Business Feed Dealer expansion program. Write to:

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Use Feedstuffs WANT ADS for RESULTS

Ask the MERCK MAN

Whether your problem is in mixing microingredients or giving your formulations the advantages of recent discoveries, the Merck man is a good man to know. He can place at your disposal Merck's vast research and production facilities—and hundreds of man-years of technical service experience with micronutrients and therapeutic agents in feeds. Get the Merck man in on your problem next time he calls, or contact him through the Merck sales office nearest you.

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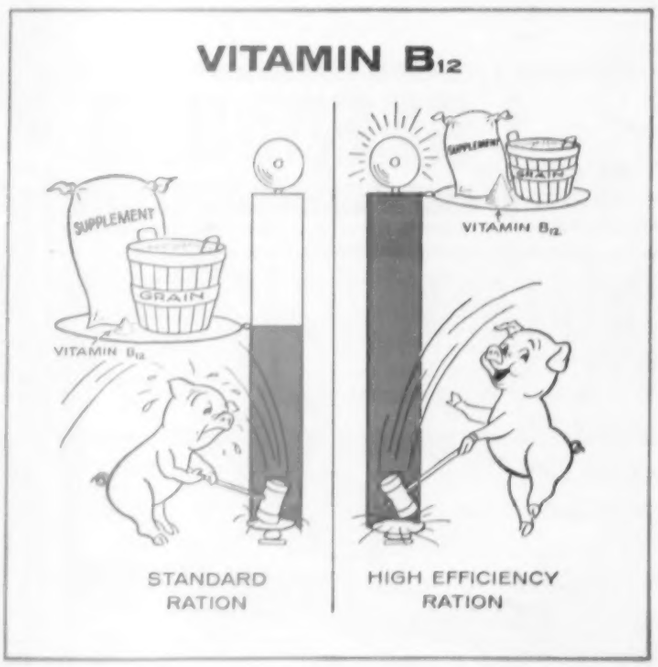
High energy rations require more VITAMIN B_{12} to convert extra calories into pounds of gain

Modern swine rations supply more calories per pound of feed. So, today's hogs make greater and faster gains on less feed. With the greater energy content of these new rations, overall feed intake is decreased. Therefore, to assure the required vitamin intake, these rations must contain higher vitamin levels.

Take advantage of latest research by adding MERCK VITAMIN B_{12} or one of the Merck multivitamin mixtures containing vitamin B_{12}. These are available for all types of poultry and livestock rations—designed for precision in handling and economy in shipping and storing.

VITAMIN B_{12} MERCK



Research and Production for Better Poultry and Animal Nutrition

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

Give Them a Chance to Buy

By Al P. Nelson

When Joe Brooks came home to a delicious roast beef dinner that night, his wife Mary thought she discerned some concealed humor in her husband's manner. His eyes twinkled and he even played on the living room floor with the twins before the meal, which was something unusual. Quite often Joe was grumpy before a meal and happier afterward.

But, Mary, wise in the ways of pleasing a husband, didn't query him about his mood. All through the meal she saw that he got plenty of roast beef, a large piece of apple pie and also two cups of coffee warmed just to the degree that Joe wanted. She knew Joe would tell her why he was so happy, if she gave him time. And womanlike, she wanted to know why Joe was happy, and she would be miserable if he failed to tell her.

Sure enough, after the kids had cleared the table—their regular job—and Mary had started the dishes, Joe laid down his newspaper and came into the kitchen.

"Need any help, honey?" he asked.

Mary smiled at him. "You know I do—always, with this bunch to cook for. Here's a clean towel. Besides, I like a man in the kitchen."

"A man?" Joe queried with a look of alarm on his face.

"You, silly," Mary said laughingly. "Satisfied?"

"Well, I hope so," Joe said. "I always want to be that man, too, Mary. Remember that."

"Okay, Gable. I'll not forget."

Then the idea began to unfold.

"Mary," Joe said with a grin, "Ken Torkelson, the BZ salesman, told me of an idea today that I think is a dilly. I really believe it will work in this town, perhaps for a mid-winter sale."

"Oh?" Mary continued to wash dishes, but her ears were wide open.

A Howling Success

"It seems that Kenny sat in the lobby of a hotel in Iowa last month talking with another salesman," Joe said. "They exchanged retailing ideas and how they can help retail accounts. This other salesman was selling automotive supplies, and he told Ken about a novel stunt a Nebraska auto supply retailer pulled, and it was a howling success."

"What was that?"

Joe chuckled again. "Well, this guy stages an all night store opening, a Sellathon, as he called it. Instead of closing his store on 6 o'clock on Thursday night, he advertised beforehand that he would keep it open for the convenience of shoppers all that night, all the next day and Friday night until 9 p.m. That made 38 hours in all. And he offered two specials at very, very low prices every two hours from 10 p.m. until morning."

Mary looked very surprised. "It's interesting, Joe, but why did he keep open all night long? Where did he get the customers?"

Joe grinned. "Well, they just came from everywhere it seems. People were so surprised to hear of a store that kept open all night—even if just for one night—that they went out of their way to visit the store. This retailer sold a lot of merchandise to regular customers, he gained many new customers and his sale was the talk of the countryside. Folks had never heard anything like that."

"Yes?" Mary said. Then suddenly she turned to her husband. "Joe! You don't mean you'd try a silly thing like that?"

Joe Flushes

Joe flushed a little. "Well, why not? Why shouldn't I be the first in the feed industry in this state to try it? It may set a new merchandising pattern in the future. Look at the grocery stores. Many are open until nine o'clock six nights a week to accommodate late shoppers. Maybe the feed men will have to do the same, at least in the busy seasons. I'd like to try it—just for one night."

Mary just put her hands on the dishpan and closed her eyes. "Joe, what in the world are we coming to? Merchandising trends are moving too fast for me. I'm getting old, I guess. Well, if you want to do it, go ahead, but don't expect me to come down in the middle of the night to serve doughnuts and coffee to your customers—please."

"Oh, but Mary, that is just what I counted on," said Joe. "But instead of doughnuts, I want to put on a midnight smorgasbord. Nothing too elaborate, but still p'enty to eat—for farm families only, and town customers who buy dog food and things like that."

Once more Mary closed her eyes. "A smorgasbord? Oh, Joe."

"Well," explained Joe, "it could

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Be sure the bait you stock has warfarin on the label!

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producers of Myvamix Vitamin E

Distillation Products Industries
is a division of
Eastman Kodak Company

come on right after the square dance."

"The square dance!" shrieked Mary. "That, too?"

"Well, I wanted to do it up right," Joe said, "otherwise farmers won't come. I'll have the employees clear out the center of the big salesroom and we'll square dance from 10 to midnight. I'll bet we'll sell lots of feed and other supplies that night."

"You'll have to, to pay for this," Mary warned.

"After the midnight smorgasbord," Joe went on, "we can show the movies." He winced at Mary's horrified look, then said, "Don't worry, it won't be all ag movies. I'll have a short half hour comedy to keep them awake. Then they'll watch a half hour feed movie and then a bathing beach movie of about 15 minutes."

"Then what?" Mary asked. "Can they go home about that time?"

"Well," Joe said, "I planned to give out an attendance prize at 2 a.m., a ton of lime, 10 bags of feed and other items. That would be right after the movie finishes."

Mary looked dazed. "Joe," she said, "you really don't think farmers are going to come to such an affair, do you, especially at midnight and stay until 2 or 3 a.m.?"

"I don't know," Joe said with a frown, "but I sure as heck am going to find out. If I know some of these farmers, they will go to bed about 7 p.m., set the alarm for 10 and come in for the square dance. Others who don't care for the square dance will come in to get a taste of the free smorgasbord. Once here for that they'll sit through the movies, and wait for the attendance prizes. The event would have wonderful publicity value, Mary, in newspaper ads, on radio and around the store."

"When would you want to stage this all-night business?" asked Mary. "Not this month?"

"N-no," Joe said. "I think it would go well about the middle of February, before the farmers have to get out on the land for spring work."

Mary brightened. "Oh, good, that will give me time to plan this event. Come to think of it," and she placed a finger on her chin, "I do have a lot of pickles in the fruit cellar, and slippery Jims, pickled crab apples, preserves, canned chicken and lots of potatoes. That will ease the food load a little. And Hilda can help me get it all ready."

"Wonderful," Joe beamed. "I knew you would help me, honey." And he gave her such a bear hug that Mary's face got red, but nonetheless she looked very, very happy.

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The Medium Egg Problem

Poultry and Feed Men Should Join in Calling Attention to the "Manifest Inequity" of Present Egg Grading Methods, the Author States

By H. L. Edwards
Wooster (Ohio) Feed Manufacturing Co.

Medium eggs have become a serious problem for the poultry industry.

The most recent quotation on large special eggs as reported on the farm basis in northern Ohio by the U.S. Department of Agriculture at Cleveland, was a range of 38¢ to 41¢. Medium eggs were 24¢ to 26¢ on the white special grade. That was a differential of 14¢ to 15¢ doz. between large and mediums. For many weeks the differential was as high as 18¢.

The weight requirement for large eggs, according to present USDA standards, is 24 oz. to the dozen minimum. The minimum weight for mediums is 21 oz. to the dozen. But medium eggs may weigh 23½ oz. to the dozen and still grade mediums. And in the same way large eggs may weigh 27 or 28 oz. to the dozen and still grade large.

Thereby hangs the serious situation faced by the entire egg production industry of the U.S.

A couple of years ago the standard minimum weight of large eggs was 23 oz. per dozen. For some reason or other it was upped to 24 oz.

New Type Chicken

It just happened that coincident with this raising of the weight standards a new type of laying chicken began to be the accepted bird for egg production. This new type chicken is being produced by a number of original breeding sources and is available through local hatcheries operating under franchise.

Facing the facts frankly and squarely, this new type chicken is a wonderful creature by all previous comparisons. She has greater productive ability. Her livability is higher, and she is less susceptible to disease. Her egg output is steadier and less subject to interruption. Her productive life is longer and she will lay more eggs for more months at a stretch than any other layer ever bred. These are her virtues, and so well has she met the needs of the egg producer that there is not a chance the industry would consider going back to the chicken of other years.

But we do hear it said that this bird lays too many medium eggs. And it's a fact that the egg size of the chicken does not come up as fast as was the case with her less capable predecessor. In her productive lifetime, however, it is a matter of record that she will lay more eggs than old style layers, and she will lay as many or more large eggs. The fact that her egg size increases more slowly would not be a problem except for the fact that she happened along at the time the large egg weight standard was raised to 24 oz.

Belongs to "Middle Ages"

As we see it, there is nothing wrong with the new type of chicken which would give us any trouble if we did not have an egg grading system which belongs to the middle ages.

We sell practically every other commodity by weight or by some other exact standard of measurement. However, we sell eggs by the dozen and that word "dozen" can mean a pound and 8 oz. or it can mean a pound and 12 oz. or even more and still bring the same price to the producer of large eggs. In the medium egg category, a dozen can mean a pound and 5 oz. or a pound and 7½ oz. and still bring the same price.

This is so manifestly dishonest that if any large corporation did its pricing on such a basis it would be cited for fraud. Yet we accept it as a matter of course and the U.S. Department of Agriculture not only sanctions such inaccuracy but actually establishes the standards as the proper basis for pricing.

Prices Checked

We recently checked the egg settlement sheets of a producer covering his deliveries during the last week in October. In this week he delivered 1 doz. jumbo eggs for which he received 49¢. He sold 260 doz. large eggs for which he received 43¢. He marketed 248 doz. of medium eggs for which he received 26¢. His

EDITOR'S NOTE: In the accompanying article, an Ohio feed manufacturer discusses the price and profit problem which egg producers face because of the present system of egg grading and pricing. Mr. Edwards points out that a severe penalty is often placed on medium eggs, even though they may weigh only a fraction of an ounce per dozen less than the present required minimum weight for large eggs. He says that the modern layer's egg size increases more slowly but that this would not be a problem if the large egg weight minimum hadn't been raised at the same time. "Let us keep the chicken and abandon the ancient method of egg pricing which is now so outmoded as to be beyond tolerating," Mr. Edwards says in noting that a more accurate weight basis is needed in pricing eggs. This article is the text of an editorial appearing in a Wooster Feed Manufacturing Co. publication, "The Feed Bag."

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average price of all eggs sold that week was approximately 34¢ doz. The medium eggs, in that week, it will be noted, brought 17¢ doz. less than large.

We do not know what his large and medium eggs actually weighed because there was no weight reported on his settlement sheet. All he knew was that he had so many dozen of large and so many dozen of mediums. And there could have been an excess above the minimum weights of 4½ lb. per case on both large and medium eggs for which he received no payment whatsoever.

If his eggs had been sold by weight, he would have been paid for what he actually produced. As it was, if we assume that the large eggs he sold at 43¢ weighed 24 oz. to the dozen, he received 28.6¢ per pound. If his mediums weighed 23½ oz. to the dozen, at 26¢, they brought him 17.6¢ per pound. Thus the penalty for a half-ounce deficiency on the dozen could have been as much as 11¢ per pound, or roughly 40%.

Some egg buyers these days are purchasing very expensive grading machines which are highly accurate. These machines will throw an egg into the medium grade if it is off only a tiny fraction of an ounce to the dozen. It also will detect an overage, be it ever so slight.

Weight Basis

But why go to all that expense to achieve accuracy in separating grades when the grades themselves permit inaccuracies of almost 3 oz. to the dozen? We submit that if egg valuation were done on an honest and logical basis, all an egg buyer would need would be an accurate scale which would weigh a case of eggs correctly.

In all fairness, let us say that egg buyers are not to blame for the fact that eggs are sold by the dozen. The dozen where eggs are concerned is deeply rooted in our customs and traditions. It will not be changed in a day because we do not willingly abandon our habits of long standing. But the future of the egg production business depends upon setting this situation to rights. The egg industry like all industry is operating on close margins, and the time is here where poultrymen cannot afford a leeway of 3 oz. between grades with no pay for anything above the minimum. Much less can they afford to pay a penalty of 17¢ per dozen for a half-ounce per dozen deficiency below the large egg minimum weight.

It is unthinkable that we will continue this fraud against the egg producer for a period of years longer. We feel it is imperative that we act immediately to secure revision of the egg grading standards to insure that producers with the new type layers will not be subjected to severe price penalties. It is important that all segments of the industry—producers, processors, hatcherymen and feed men—unite in bringing the manifest inequity of these grading methods to the attention of the USDA.

Certainly we must not blame the splendid new chicken for the difficulty. She does an honest day's work every day and a better day's work than has ever been done by any other chicken in history. She is merely getting gypped out of a large part of the value she is delivering. Let us keep the chicken and abandon the ancient method of egg pricing which is now so outmoded as to be beyond tolerating.

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Putting the Egg Business in a Package

Cage Laying Program Coordinated by General Mills Includes Financing, Specified Housing, Equipment, Pullets, Feed and a Guaranteed Price for the Eggs

By GEORGE L. GATES and ROGER BERGLUND
Feedstuffs Editorial Staff

You can't continue to sell feed unless the producer is making some money, and the egg producer can't make much money these days unless he produces a steady supply of high quality eggs efficiently and has a good market for them.

Put the solutions to these problems together in a package, and you have a so-called "package egg program" involving farmers and feed, equipment and produce people.

Some persons call this integration in egg production, but, in the case of a relatively new cage laying program in Kansas, it might also be called coordination and cooperation among poultrymen and firms serving the poultry industry.

What It Includes

The case in point is a program which has the feed division of General Mills, Inc., as its prime mover. The package for the producer includes financing, specified housing, equipment, pullets, feed and a ready market for the eggs, with a guaranteed price.

Some persons say that financing and integration some day will become as extensive in egg production as in broiler production as specialization increases and operations grow in size. Others figure that this won't be the case. Actually, it probably depends a great deal on the area and its particular markets, requirements and present systems.

Of course, some cooperatives provide extensive marketing services, and some of them provide everything from feed to marketing. Also, there have been some local plans where package-type programs for egg producers have been carried out.

However, new General Mills programs—either now in operation or ready to get under way—are believed to represent the first large scale venture in putting producers and private enterprise together in a package egg deal which is actually functioning.

Some persons estimate that currently no more than about 5% of the U.S. egg production is "financed."

How far will this sort of thing go? Perhaps no one will make any flat predictions. But one agricultural industry authority, referring to the General Mills program, recently said that he'd "hate to be trying to compete with contract eggs in the future."

There are and probably will be many variations in package egg programs as more firms and producers get into this type of thing, but, in the meantime, just what is the General Mills program? What is the thinking behind it? How does it work?

Officials of the company have explained it for Feedstuffs readers.

Here is an interior view of the cage laying house used in the General Mills package egg program. Each house holds 1,680 layers in double-decked, 8-in.-wide cages. There are four rows of back-to-back cages.

In the egg program coordinated by General Mills, contracts are made with produce firms for carrying the General Mills label on the cartons. As illustrated above, the cartons bear the trade name "Sure-Fresh," and General Mills puts a money-back guarantee on the eggs.

Kansas Program

General Mills is now carrying out or planning the program in several midwestern states, but for purposes of explanation, let's first describe the set-up in Kansas, which supplies the Kansas City market.

There has been a lot of conversation in the past about the need for better quality eggs and for good markets for those eggs. In this Kansas case, something really specific is done about it.

In fact, effective marketing and merchandising might be called the key to the whole operation. And that's where the produce organization and General Mills' own merchandising help come in.

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A 30-by-80-ft. house is used in the Kansas cage program. It is built of aggregate blocks, has no windows and is well ventilated. The houses are of standard size and construction. The house in the above picture is equipped with an outside tank for bulk feed.

with a floor price of 37¢ a dozen for the grade A large eggs.

With low current egg prices, the program is being put to its test right away, but it is said to be getting off to a successful start, and similar programs are under way or planned in other areas.

To be assured of this market, the producer has to turn out high quality, absolutely uniform eggs. That's where other parts of the package fit in. Housing, equipment, pullets, feed —all are uniform and specified in the agreements. Also, General Mills and its dealers and the produce company supervise and advise producers in the program.

General Mills isn't directly responsible for the egg marketing in this program; Hurst buys and sells the eggs. But General Mills takes an active part in helping merchandise the eggs.

Million-Hen Goal

There now are nearly 200 cage laying houses (with 1,680 birds each) in the program which involves Kansas plus parts of Missouri and Colorado. The goal, expected to be met by next fall, is 600 houses and a million hens. The Kansas City feed plant of General Mills manufactures the feed, and it is sold through the company's dealers.

There is broad interest in the program, and one reason is that it promises to give a good, steady income to participating farmers. In the Kansas area, reduced wheat quotas and drouth, hurting or halting crop and livestock production, have stimulated interest in the egg program as another source of income. This egg business, it's pointed out, is something that doesn't hinge on the weather.

Producer's Investment

The initial cost for a producer to get into the program is about $11,000, including the house, equipment and the first pullets. The minimum amount of cash which the producer must have is about $3,000. The rest can be financed. However, all applicants are carefully screened and must be good, efficient producers. Actually, among the first producers to sign up, some 75% or more did not take the full financing.

General Mills and the equipment companies provide some financing. The rest is provided by local banks and the U.S. Farm and Home Administration. Feed and pullet financing is handled by General Mills feed dealers.

The house can be financed over a three-year period, the first pullets over a year's period, the egg cooler over a two-year period and the cages and ventilating system over an 18-month period.

If a producer takes the full financing, his total monthly payments initially on the house, pullets and equipment are close to $500. This means that, after he also pays for feed and other costs, his net income is not very large. However, after the first year, he starts getting a pretty good income. And, after three years, figuring 70% production and 37¢

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eggs, his monthly net income from the egg enterprise will be more than $500.

All egg checks go to the local bank, and the banker pays all creditors, with the balance going to the producers.

The cage laying system is used because of its advantages in efficiency and uniform quality egg production.

Housing, Equipment

The producer has the choice of two houses—either a Dodson aggregate block house or a Permco aluminum house. The houses are 30 by 80 ft., have no windows and are well ventilated. Each house holds 1,680 layers in double-decked, 8-in.-wide cages. There are four rows of back-to-back cages.

The cages and the ventilating system in the Dodson house are Northeo brand. A Permco ventilating system also may be used.

A mechanically refrigerated egg cooler is another requirement.

Pullets must be DeKalb or Hy-Line hybrids. These, it was explained, were selected because of their small body size, good egg production and good egg size. Producers do not raise their own replacements. Arrangements for raising the pullets are made by the General Mills dealer, and the producer buys them. Pullets are raised in several centers under the supervision of General Mills.

The producer must feed a complete cage laying mash manufactured by General Mills and supplied through its dealers. No grain may be added to the ration.

The principal reason for this and other requirements is that eggs must all be uniform, with the same shape, shell color, yolk, etc., and must be of uniformly high quality.

The eggs are to be gathered three times daily and put into the cooler. They then are delivered by the producer or picked up by the feed dealer at least twice weekly. Each Larro Feed dealer in the program serves as an egg collecting point, and he stores the eggs in refrigerated storage in his establishment. They are transported to market by Hurst in refrigerated trucks, thus being under refrigeration from the time they are laid.

The feed is priced under the standard system, varying with the ingredient markets, and the dealer has a standard mark-up on the feed. Bulk feed is used in some of the operations. Some of the dealers have bulk set-ups, or the bulk feed may go directly from the General Mills plant to the farm. All feed is invoiced through the dealer.

An important feature of the housing is the air conditioning system, which means higher production in the summer when temperatures zoom. Winter temperatures are expected to stay at 45 to 50° in the well insulated houses that are used.

70% Production

The culling program in a cage operation can be adjusted to get any of a number of production rates, but in this program, set up like a factory system, the planned rate is 70% on a per cage basis. This rate, it is figured, is the most economical and efficient level for culling and replacement after the program is in operation.

The expected replacement rate is about 7% a month, or total replacement every 15 months.

On the average, the eggs from this program have been running 96% grade A, which compares with a normal average of a little over 70% for Kansas. This is one of the keys in assuring farmers more income from this type of program.

The program is important for the Hurst organization in marketing eggs. Eliminating one of the failings in the past in egg marketing, the program, with its constant, controlled production, assures a uniform supply of high quality eggs the year around.

Merchandising

A vitally important part of the program is merchandising, and General Mills enters into the picture here, where its food merchandising experience is an important asset.

In the Kansas and other programs coordinated by General Mills, exclusive contracts are made with produce firms for carrying the General Mills label on the carton. The cartons bear the trade name Sure-Fresh, and General Mills is putting a money-back guarantee on the eggs.

The feed firm also will help with point-of-sale merchandising aids, and there will be Betty Crocker recipes for using eggs.

Eggs in these midwestern programs are to be sold in the midwestern markets which are covered. No eggs are to go to eastern markets. In the marketing agreements with the producer firms, there are restrictions which limit sales to the regions where the eggs are produced. They cannot be sold under the General Mills label to other areas.

In connection with the marketing and merchandising programs, it is pointed out that generally eggs have not caught up with the merchandising of other foods. It is anticipated that with a uniform high quality product and effective merchandising, prices eventually will become more stable and assure a steady profit to producers. There is little salesmanship or merchandising on eggs now, but as programs like this grow, there will be more brand name selling and consumer buying of eggs, as with other foods.

Marketing is considered one of the most serious problems for farmers today, and this program is said to be an answer to the problem.

General Mills puts together and coordinates the whole package. The production part of it is generally arranged on a community basis. At least 10 houses in a particular locality are sought.

Most of those in the program are farmers who take on the cage program as an enterprise which can be profitably handled by the family labor along with some other farm operations. Most of the operators have no more than one of the cage houses.

As in other large scale, financed poultry operations, the entire program is supervised. General Mills dealers and servicemen visit and advise the producers, and a Hurst Foods representative regularly visits the farms.

Other Programs

General Mills also has egg programs in Mississippi and Arkansas. There are 400,000 hens in the Arkansas program now, with a goal of 1.5 million layers.

The company is now going into southern Illinois and eastern Missouri, setting up a package program, with a goal of 500,000 hens, to supply eggs for the St. Louis market. It is expected that package programs will be established by General Mills in Nebraska and other midwestern states, too.

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KANSAS FORMULA FEED CONFERENCE

(Continued from page 35)

amount of dietary protein per unit of gain than we deem possible today."

Dr. Stephenson likened the amino acids to stones for a house. There are so many stones of given shapes that will go together to build the house. If there are not enough of just the right sizes, the house cannot be completed; if there are too many, extra energy is needed to get rid of those stones.

He cited an experiment at Arkansas in which a response to methionine in a chick's diet was obtained only when the ratio of lysine to methionine was greater than 2 to 1. If the ratio were narrower than 2 to 1, a growth depression often resulted from the addition of methionine, although, he said, theoretically in many cases, the diet was deficient in both lysine and methionine and the energy level relatively high.

Information is available, he said, which indicates that similar relationships exist relative to the use of crystalline amino acids in swine diets.

When more information is obtained on the relationships of amino acids, Dr. Stephenson said he could foresee production of broilers on the basis of a pound gain on a pound of feed.

Poultry Management

T. B. Avery, head of the Kansas State poultry department, discussed modern poultry management. He said there appears to be a future for both the floor and cage operators in Kansas, if the owners adhere to sound management practices. However, he claimed that the man who keeps the same small flock and kind of birds he did 20 years ago and manages them as he did then is on his way out of business.

"Profits in any laying flock depend upon four important factors," he said. "These are breeding, nutrition, good management and a sound marketing program. Each depends on the other for success."

Larger flocks, modern equipment and increasing competition require both good business ability and the latest management practices, he pointed out.

No poultry enterprise should become so mechanized that every bird in the house cannot be seen every day. The more advanced breeding and nutrition become, the more important "man" becomes in management, he explained.

In judging the amount of time spent per bird, Mr. Avery said that one hour of labor per hen per year is a maximum.

"Without a sound marketing program, poultrymen in Kansas find it difficult to succeed," he said. "Quick cooling, frequent marketing and selling on grade to a quality market are musts. Competition will take care of the poultryman who fails to keep up with changing times."

SWINE—The importance of unidentified growth factors for swine is being investigated at several experiment stations, said Dr. Lawrence E. Carpenter, executive director, Distillers Feed Research Council, Cincinnati.

"Some of the first experiments with distillers dried solubles produced increases in litter size and weaning weights of pigs when it was included in the diet. Later it was found that a vitamin B-12 concentrate made from distillers dried solubles increased the

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U.S.I. FEED NEWS

Vol. IV, No. 1 ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ January, 1957

Protein Level Affects Methionine/Calorie Ratio in Broiler Diets

Recent research indicates that changes in the protein level of broiler diets do not have the same effect on the methionine requirement at low energy levels as they do at high energy levels.

Experiments showed that when sufficient energy is available the methionine requirement increases in direct proportion to the increase in protein level. This was found to occur when the energy level of the diet is approximately 1000 calories or more per lb.

Pantothenic Acid has Effect on B_{12} in Liver

In studying the effect of pantothenic acid on vitamin B_{12} metabolism in the chick, researchers have found that pantothenic acid seems to have a sparing effect on the B_{12} requirement of the chick.

Investigators observed an increase in the B_{12} content of the liver when the pantothenic acid content of an experimental diet was increased to adequate levels.

New Amino Acid Table Available from U. S. I.

A newly revised and expanded table showing the amino acid composition of common feedstuffs has been drawn up by Dr. H. J. Almquist.

For your free copy of the table, along with Dr. Almquist's booklet, "Proteins and Amino Acids in Animal Nutrition," write, Editor, U.S.I. FEED NEWS, 99 Park Avenue, New York 16, N. Y.

Feed Prospects For '57 Look Bright; Trend To High Efficiency Feeds Continues

Commodities Lower, Supplement Use to Increase

Genuine optimism prevails throughout the entire feed industry as it begins the new year. The price and supply situation is favorable, and the nutritional advances of the past few years continue to point the way to more efficient and economical feeds in 1957.

Supplements Gain Added Importance

Among the developments that will receive added attention in the coming year is the increased emphasis on better protein balance and higher efficiency in feeds. Research in 1956 has verified the value of high energy feeds and pointed to greater use of protein and vitamin supplements. The amino acids, and methionine in particular, have been found to be especially important in realizing the full efficiency potential of high energy feeds. Interest in such protein sources as feather meal, poultry by-products and fish meal has broadened the understanding of methionine's value in raising the quality of these protein sources.

Twenty-year projection of U. S. population indicates size of future market for meat and poultry products. Agricultural Marketing Service predicts 40 per cent rise in demand for farm products by 1975.

Trend to Greater Pigmentation

In poultry feeds, continued market demand for good pigmentation in poultry, coupled with the increased fat content of poultry feeds, should greatly enlarge the use of antioxidants in feeds.

The trend toward greater consumption of feed products in general is expected to continue. The increased use of manufactured feeds for cattle should add considerably to the growth of the feed market, as will the steady rise in U. S. population. (See graph)

'56 Crops Were Good

Feedstuff supplies are now higher than they have ever been and it is predicted that corn prices will average a little lower later next spring and summer than in the same period of 1956. A bumper soy bean crop should also mean lower prices for that commodity.

The corn crop in 1956 was the second largest on record, and although corn acreage dropped to the lowest level in 60 years, yield per acre is the biggest ever. With a favorable growing season in 1957, corn prices should remain fairly stable. As to soy bean meal prices, the only limiting factor seems to be the troubled Suez situation, which may force European consumers to draw on U.S. supplies to a greater extent than previously.

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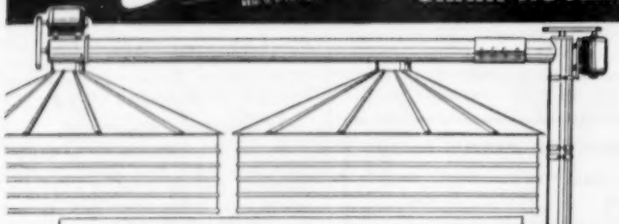

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ADA OFFICERS—Officers who have directed affairs of the American Dehydrators Assn. during 1956 are pictured above. They are, from the left: Joseph Chrisman, executive vice president; Robert Pharo, Keystone Dehydrating Co., second vice president; Kenneth Morrison, Morrison & Quirk, president; and W. A. Donnelly, National Alfalfa Dehydrating & Milling Co., first vice president.

rate of gain of weaned pigs in the presence of vitamin B-12."

More recent feeding tests with swine, at the Illinois station, indicated growth response to a grass juice concentrate but not to other good sources of unidentified growth factors for chicks. In Nebraska tests, a growth response was obtained with a fermentation product and dried whey. The fermentation product has been evaluated by other groups. Some workers report no response; others indicate a growth-stimulating effect, Dr. Carpenter said.

Work with milk replacer formulas for early weaned pigs at the Iowa station, he continued, showed that when 2.5 or 5% of dried skim milk was replaced by like amounts of distillers dried solubles, improved growth resulted.

"Evidence is accumulating which indicates that unidentified growth factors are required for swine," he said. "The variable responses are probably due, in part, to the storage or carry-over of the factors in test animals or to their presence in the dietary ingredients used. Nutritional interrelationships and stresses, such as rate of gain and the response of 'disease' may also affect results. It is significant, however, that growth increases are obtained. Swine nutritionists will conduct more critical work in this field to fully evaluate the role of unknowns in swine nutrition."

NUTRIENTS IN FEED—The vitamin A content of formula feeds came in for consideration by Dr. D. B. Parrish, department of chemistry at K-State. Sources of vitamin A, he said, include the feeding oils, yellow corn containing carotene and cryptoxanthin (provitamins A), dehydrated alfalfa meal containing large quantities of carotene, and the synthetic vitamin A. It is estimated that at present from 50 to 70% of the supplemental vitamin A used in formula feed is in the form of dry stabilized, synthetic vitamin A, instead of liver oils, he said.

New crop yellow corn contains about 2,000 to 2,500 units vitamin A activity per pound. Under midwest storage conditions, corn appears to lose 15 to 25% of its vitamin A activity per year, he said. Losses are increased if the corn is ground.

If yellow corn makes up 50% of a ration, it will supply more than three fourths of the NRC vitamin A requirements of broilers. Two percent of 50,000 units dehydrated alfalfa meal will do the same, he said.

As a pigmenter of broilers, Dr. Parrish said the alfalfa meal is much superior to yellow corn and to three commercial pigmenters experimented with at K-State.

Pointing to the problem of getting synthetic vitamin A mixed into the feed adequately, Dr. Parrish said that only some 200 to 600 vitamin A containing particles per pound will be present in a feed containing 1,000 units of A per pound.

"One should not expect stabilized vitamin A to retain satisfactory potency for prolonged periods of time. In some studies reported, the stabilized vitamin A retained 60 to 85% of the original potency for from four to six months," he said.

More information is needed on the effect of various feed processing conditions on stability of vitamin A, he pointed out.

Dr. Parrish also said that levels of vitamin A in high energy feeds may be inadequate and this problem needs more study.

Soil Fertility Effect

Dr. G. M. Ward of the K-State dairy department said that studies indicate that soil fertility has little effect on the nutritive value of feeds, provided concentrate is fed at a relatively high level. He noted that far more serious nutritional ramification of infertile soil is the mediocre to poor management often associated with it.

"Serious imbalances may occur in the rations of animals maintained on relatively infertile land," he pointed out. "These imbalances may result from mismanagement contributed to by the inability of infertile soil to support legumes and high yields of nonleguminous crops."

Effect of Storage

A study on the effect of storage on the proteins and vitamins of grains was reported by Dr. Berl A. Koch, department of animal husbandry, K-State.

In summary, Dr. Koch said:

"The nutritive value of barley apparently was not decreased when the grain was stored as long as three years.

"Barley stored two years still contained adequate amounts of most B-complex vitamins studied to meet the

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dietary requirements of growing rats. The one exception was riboflavin which was deficient even in fresh barley.

"No significant differences were noted in the nitrogen retention or the weight gain of growing rats fed stored or fresh barley either as the only source of protein or as a partial source of protein.

"In the case of growing-fattening swine, average daily weight gains and feed efficiency values obtained when feeding barley stored for three years were equal to those obtained with new-crop barley when both barleys were supplemented with equal amounts of casein or equal amounts of a soybean-cottonseed meal mixture."

OTHER—A loss of about $3 per head of cattle per year because of parasites is an estimate mentioned by Dr. Dean S. Folse, School of Veterinary Medicine, at K-State, in his talk on the parasite problem. There are more than 65 kinds of common internal parasites affecting domestic animals in Kansas, he said.

Parasitic losses frequently are the regulator of profits in animal production, he pointed out. "To assure future profitable and efficient livestock production in Kansas, all concerned with the problem of parasitism must work together. This means that an essential part of the team must be composed of the feed industry."

In fighting parasites, Dr. Folse said, "We must present a united attack from a management, feeding preventive and treatment standpoint to successfully meet the challenge of increased populations and new species of parasites."

He said that some good weapons against parasites are available, but he cautioned against indiscriminate use of them until more information is obtained on their effects on other parasites. He said he didn't think an animal should be treated for a parasite unless the animal actually has the parasite.

Medicated Feeds

In his talk on the use of medicated feeds, Dr. Neal F. Morehouse, Dr. Salsbury's Laboratories, Charles City, Iowa, defined the different types of medicated feeds and explained the latest labeling requirements.

"A decision to include medication in feeds is not one to be taken lightly. Such a decision carries with it responsibilities beyond those incident to the manufacture of non-medicated feeds."

He offered the following suggestions to help a feed man meet these responsibilties:

1. Use all available information you can find in making a choice of medication for your feed. Trade magazines, scientific journals, trade meetings and the manufacturers of medication as well as their representatives are good sources of information.

2. Provide competent personnel to supervise the mixing of drugs into feeds.

3. Keep all medication supplies in a special place provided for them. This will assist you in keeping an accurate detailed inventory.

4. At frequent intervals balance the disappearance record provided by your inventory against your record of the amount of feed mixed with each kind of medication.

5. Never remove a label from a container while it still contains medication.

6. Be sure to mix the medication at levels recommended by the supplier.

7. Allow sufficient mixing time for uniform dispersion of the drug in the feed. The time required will vary with different types of mixing equipment. Your supplier can help you determine how long you should mix.

8. Thoroughly clean the mixers of any remaining feed after each run of medicated feeds. If the drug tends to be electrostatic, then extra care must be taken. Your supplier can tell you whether or not the products are electrostatic.

9. Never put more than one drug in the same feed except on the recommendation of the suppliers or unless you know that they are compatible. There are legal restrictions to the indiscriminate use of drugs in feeds.

10. The use of drug premixes, when available, simplify the mixing problem. Some medicinals are available in regular microingredient blends while others may be had as special premixes upon request.

11. Send your feed servicemen to poultry and livestock disease clinics whenever possible.

12. Ask for the assistance of local representatives of the manufacturers of products you use in your feeds. They can often help lighten your responsibilities.

Specialty Feeds

Dr. W. H. Hastings, department of flour and feed milling industries, K-State, pointed to specialty formula feeds as a very good profit item for a feed manufacturer. To do a good job with specialty feeds, the manufacturer should satisfy the following requirements, he said:

1. Have available ingredients providing all known nutrients for growth of the animal.

2. Store and process these ingredients so that the essential nutrients remain in the feed until fed.

3. Manufacture the feed so it is acceptable to the animal and the feeder.

4. Control the formulation and manufacturing costs so that the feed cost justifies its use.

Among the types of feed that can be made he listed dog and cat food, rabbit feeds, fish and game rations and pelleted feeds for fur-bearing animals.

The need for feed men to give a hundredweight of service with a hundredweight of feed was stressed by Oscar Straube, Pay Way Feed Mills, Inc., Kansas City, and chairman of the board of the American Feed Manufacturers Assn.

The changes in the industry since World War II have been tremendous, he noted. But he foresaw even greater changes in the years ahead. "We now use about 30 ingredients in formula feed; we will probably by using 50 or 60 in the foreseeable future."

Feed men have a responsibility to translate research information into feeds for producers in a hurry, he said.

Mr. Straube called attention to the fact that medicated feeds pose problems, but said that the feed industry so far has proceeded with care and caution and has gotten the trust of

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Prof. F. W. Atkeson, head of the dairy husbandry department, was chairman of the conference which was sponsored jointly by the Kansas State Board of Agriculture, the Kansas Grain & Feed Dealers Assn., the Midwest Feed Manufacturers Assn. and the college.

At the close of the conference Prof. Atkeson was presented with a pipe by Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn.

Social activities during the conference included a chicken barbecue at the Wareham Hotel on Sunday evening, and the annual banquet Jan. 7. College student presented the banquet entertainment.

Exhibits, prepared by the various departments of the agricultural college, were set up in the basement of the extension building.

Grasshopper, Cricket Threat Termed Serious

WASHINGTON — Western and midwestern ranchers and farmers face possible serious damage from grasshoppers in 1957, the U.S. Department of Agriculture reports. Mormon crickets are also expected to be troublesome in half a dozen western states, particularly Montana, Nevada and Wyoming, the department says.

Weather, as always, can alter the present grasshopper and Mormon cricket outlook, based on surveys made in the latter part of 1956. A further survey to be conducted this spring should provide more accurate information on which plans for control of these pests can be based.

The weekly Cooperative Economic Insect Report, released by USDA's Agricultural Research Service, carries a color map showing the extent and severity of grasshopper infestations forecast for 1957.

More than 22 million acres of rangeland in 19 western and midwestern states are threatened with light to very severe grasshopper damage.

Rangeland areas where grasshopper populations are likely to be highest are in the tri-state region of the Texas Panhandle, northern Oklahoma and Kansas; in Montana; in a pocket along the Arizona-Mexico border; and in California.

Smaller potential trouble spots occur in New Mexico, Nebraska, Colorado, Wyoming, the Dakotas, Oregon, Idaho, Arkansas, Utah, Nevada, Washington and Missouri.

Greatest grasshopper increases on cropland appear to be in Minnesota and North Dakota, but farmers in many midwestern and western states may find it necessary to apply control measures against the pests to avoid damage to cultivated crops. Grasshopper egg pods were found last fall in threatening concentrations on cropland in Montana, Idaho, Utah and New Mexico, and eastward through Arkansas, Missouri, Illinois, Indiana and Michigan.

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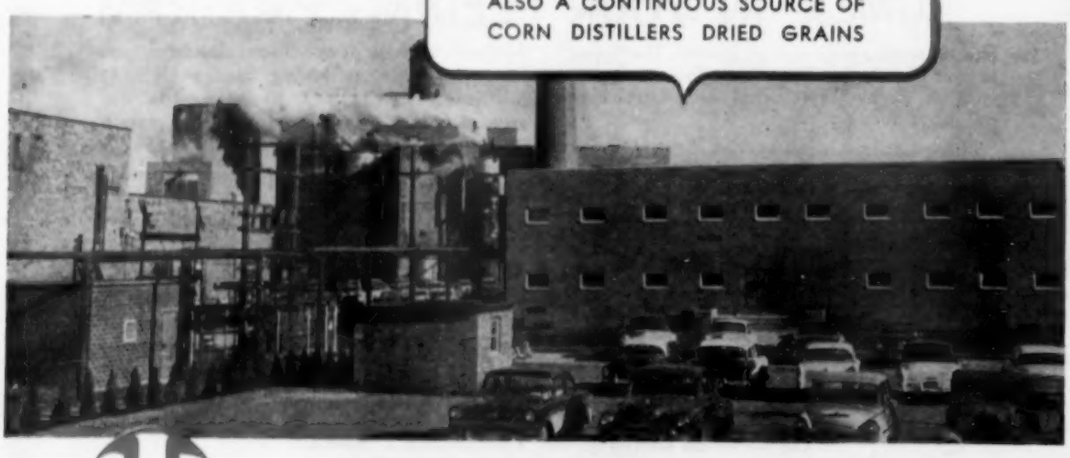

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FEED SALESMAN WANTED BY STEADIly growing feed company located in northern Indiana, for new areas around Fort Wayne and Lafayette, Ind. Prefer man with agricultural background and agriculture college graduate. Please give details of experience and background. Replies will be in strict confidence. Write Ad No. 2363, Feedstuffs, 2272 Board of Trade Bldg., Chicago 4, Ill.

FULL TIME, SIDELINE OR BROKERAGE representative. Unusual opportunity to build substantial business in Pennsylvania or New York State for experienced man that calls on wholesale and retail feed dealers. Drawing against liberal commissions. Give details of selling experience. Replies will be held confidential unless otherwise stated. Write: Dept. J, 521 S. 3rd St., Minneapolis 15, Minn.

WE NEED AGGRESSIVE FEED SUPPLEment salesmen—territories open in Illinois, Missouri and southeastern Iowa. Also Indiana, Michigan and Ohio. You should be familiar with feed manufacturers, dealers and feeders in the area. Write giving us your background and experience. Interviews will be held in the territories concerned. Address Ad No. 2328, Feedstuffs, Minneapolis 1, Minn.

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Important opportunity to immediately take over high-producing established Northeast Iowa Farm Seed Territory for leading AAA-1 firm with aggressive advertising, merchandising program. Seed experience preferable but not necessary. Unusual opportunity for right man. Address Ad No. 2376, Feedstuffs, Minneapolis 1, Minnesota.

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SALESMAN WANTED—MAN CALLING ON feed dealers and elevators who wishes to add $300-$500 to his monthly income. Nationally advertised product. A natural repeat item. Choice territories open. Write P. O. Box 5078, Minneapolis, Minn.

WANT TO ESTABLISH YOUR OWN BUSIness? Can you sell to feed manufacturers? Ask about selling our proven line of feed supplements. We'll travel with you to help you get started. Write today and tell us about yourself. Box 387, Avon, Conn.

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FOR SALE—ENCLOSED MOTORS, RICHardson scales, truck scales, hammermills, oat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

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WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

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FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Ad No. 8774, Feedstuffs, Minneapolis 1, Minn.

MIXERS, VERTICAL, TWO-TON, RICHmond Gyro Whip Sifter, Sewing Machines, Molasses Mixers. Ray L. Jones, 2222 Oakview Drive, Jefferson City, Mo.

TWO (2) RICHARDSON HIGH SPEED Scales, six (6) bags per minute, complete with agitator and drives. Includes extra outside hopper and extra weight box. Coop. G.L.F. Exchange, Inc., P.O. Box 973, Buffalo 5, N. Y.

FOR SALE—ALUMINUM TANKS, 400 GAL. up to 23,000 gal.; Sprout-Waldron 336 cu. ft. Ribbon Mixers; 4'x30', 6'x30' and 6'x50' rotary steam tube dryers; 3'x24', 4'6"x40', 5'6"x30' rotary hot air dryers. Hammermills, pulverizers, attrition mills, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

FOR SALE — BEIL SELF-PROPELLED Field Harvester in excellent condition with large number of parts. Self-unloading field wagon. Dodge forage feeder. PS-28 McGehee Dehydrator in excellent condition ;with oil and gas furnace. 75 H.P. Century California Pellet Mill with all allied equipment. Richardson automatic scales. Paul Bros., Laurel, Iowa.

MOLASSES MIXERS: TWO NO. 2 PURItan, one No. 3 Puritan, one small Anglo-American. Hammermills: Jay Bee, Forda, Blue Streak, Gehl. Motors: 10 to 25 H.P. Starters: 60 H.P. C.E. compensator, 50 H.P. G.E. compensator, 20 to 40 H.P. magnetic, all 220-volt, 60 H.P. Hercules power unit. Quantity of No. 2 and No. 4 Jay Bee screens. J. D. Vance, Box 497, Murfreesboro, Tenn.

BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

BUSINESS OPPORTUNITIES

FOR SALE — FEED MFG. FACILITIES, grain elevator, hatchery, wholesale business. Located Illinois. All equipment and buildings in good condition. Death of owner necessitates this sale. Address Ad No. 2369, Feedstuffs, Minneapolis 1, Minn.

FOR SALE — LOCATED IN PACIFIC Northwest — Modern up to the minute feed plant—bulk storage, fine trackage, molasses plant—pellet mill—equipped to make anything. Pictures and full description upon request. Address Ad No. 2351, Feedstuffs, Minneapolis 1, Minn.

ALFALFA DEHYDRATING PLANT, OVER 60,000 cu. ft. storage facilities. Heil Dryer, Grinder, Automatic Feeder and 20 ft. Dump Lift, Gas Furnace. Located in eastern central Nebraska, in deep well irrigation district. Address Ad No. 2377, Feedstuffs, Minneapolis 1, Minn.

FOR SALE — ALFALFA DEHYDRATING plant at Lake Preston, S. D. Arnold Dryer, gas fired. Butler Steel Building, also Wenger Molasses Mixer. Complete, ready to go. Excellent alfalfa country. Contact—Emil Mayling, 3440 Narragansett Ave., Chicago 34, Ill.

FEED STORE, N. E. W. Va. Gross $35,000! R.E. (70'x100'.) Prkg. Elec. elevator! Retiring. $17,270. Dept. No. 8477.

FEED STORE, N. E. N.Y. $76,748 gross! ¼ mi. from R.R.! Top oapt.! Est. 50 yrs.! 8,000 sq. ft.! $39,000. Dept. No. 42404.

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SITUATIONS WANTED

DESIRE POSITION AS SALES AND SERVice representative. Capable of complete charge of poultry growing operation. Experienced, efficient, courteous. Married and in early forties. Have extensive knowledge of raising quality meat birds, with complete understanding of problems in the field. Have done sales work with vaccines and feed supplements. Address Ad No. 2382, Feedstuffs, Minneapolis 1, Minn.

MACHINERY WANTED

CALIFORNIA CENTURY 75 H.P. PELLET Mills and heavy duty 50 H.P. Pellet Mills. Prefer T.E.F.C. motors, 440 volts. Sioux Industries, Inc., P. O. Box 357, Sioux City 3, Iowa.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANTED TO BUY

WANTED TO BUY—USED 20 TO 22 FT. Bag Conveyor with or without motor. Box 248, Wessington Springs, S. D.

E. G. Muir

E. G. Muir to Head Bemis Sales Section

ST. LOUIS—E. G. Muir, sales manager for the Omaha sales division of Bemis Bro. Bag Co., has been named to head a newly designated sales development section of the company's general sales department in St. Louis. Announcement was made by H. V. Howes, vice president and director of sales, to whom Mr. Muir will report.

Mr. Muir will supervise Bemis sales management methods and procedures, advertising and publicity, trade extension, and sales personnel selection and training. He joined the Bemis organization in 1949 as a salesman at Omaha, and was made an administrative assistant there in 1951. He was named sales manager in 1953.

Du Pont Announces Million Dollar Aid to Education Program

WILMINGTON—A fund of more than $1,000,000 for grants to 122 universities and colleges in its annual program of aid to education was announced Jan. 7 by the Du Pont Co. This support, which is for the next academic year, is an increase over the $900,000 in gifts made for this year.

Nearly all of the increase and more than half of the entire program are for the improvement of teaching in universities, colleges and high schools. The grants will support science and mathematics as well as other subjects.

Du Pont is awarding a total of $585,000 to nearly 100 colleges and privately supported universities to advance the teaching of science, mathematics and other fundamental liberal arts subjects.

The company is granting $290,000 to universities for fundamental research and $165,000 for post-graduate fellowships in science and engineering.

Israel to Purchase Corn from U.S.

WASHINGTON—The U.S. Department of Agriculture has issued a purchase authorization to Israel to finance purchase from U.S. suppliers of up to $1,929,900 worth of corn (including certain transportation costs).

The authorization issued under an understanding with Israel to substitute the corn for an equivalent amount of butter previously authorized under a Public Law 480 (surplus disposal law) agreement.

IOWA FEED MILL BURNS

ELGIN, IOWA—The Elgin (Iowa) Co-operative Company's feed mill and grain elevator were destroyed by fire, causing a loss estimated at $100,000.

Stilbestrol Authorized For Lighter Weight Cattle in Canada

OTTAWA, CANADA—Feeds containing diethylstilbestrol may now be fed in Canada to beef animals weighing 400 lb. and over, government officials announced recently. This represents a decrease in the weight minimum, the Canadian Department of Agriculture noted.

The Food and Drug Directorate of the Department of National Health & Welfare advised that stilbestrol could now be recommended for feeding to cattle 400 lb. and over. Formerly the minimum was 600 lb.

Previously, upon the submission of data, U.S. officials had also authorized feeding of stilbestrol to smaller beef animals.

Meanwhile, in a recent bulletin, the Ontario Retail Feed Dealers Assn. called attention to reports of illegal practices in the sale of custom mix or "prescription" feeds containing stilbestrol. There is no implication that such practices are carried out within Ontario, said M. H. McPhail, association secretary, but it was considered advisable to remind the trade of regulatory provisions.

Mr. McPhail said that cattle men who have an abundance of good quality roughage and high protein grains and who plan to run steers over the winter, may desire to feed stilbestrol but do not see any need for protein supplement, present carrier of stilbestrol.

"It appears that some feeders have been successful in obtaining a supply of the stilbestrol premix," Mr. McPhail said. "This premix can be sold legally only to feed manufacturers for inclusion in feeds registered under the Feeding Stuffs Act. . . . The department, however, has recognized the demand for a less costly stilbestrol carrier and is prepared, upon receipt of application, to register a less costly carrier, such as barley, containing the optimum allowance of stilbestrol supplement. No actual applications for such registration have been reported to date, but it is expected that consequent demand will force action of this nature to take place."

The Edgewater Gulf Hotel, Edgewater Park, Miss., 1957 Headquarters for the Dehydrators Association's Meeting Jan. 31-Feb. 2.

CHARTER ISSUED

CHARLESTON, ILL. — A state charter has been issued to Baker's Feed & Supply Co., Charleston, Ill. Forming the corporation are Gale Baker, D. L. Duzan and Rex Walsh.

Edmund H. Fallon to Head GLF Drive

ITHACA, N.Y. — Edmund H. Fallon, assistant general manager of Cooperative G.L.F. Exchange, will head a drive to increase the cooperative's volume in 1957.

Announced at a conference Jan. 2-4 at G.L.F. headquarters in Ithaca, the responsibility is part of his new position as assistant general manager in charge of operations, C. N. Silcox, general manager, said. Mr. Silcox now will devote his attention primarily to the fields of policy, relations with the board of directors and public relations.

"The assistant general manager now has full authority and responsibility for all operations," Mr. Silcox said. Mr. Fallon will continue in his position as director of wholesale services.

A native of Westville, N.Y., Mr. Fallon joined G.L.F. in 1931 after graduating from Clarkson College of Technology. He served as a store manager and district manager before setting up the G.L.F. petroleum division in 1938. He managed the division until named director of education in 1943. He moved to G.L.F. Farm Service in 1945 and in 1953 became director of wholesale services.

REBUILDING UNDERWAY

CANEY, KANSAS — Construction is underway on the new elevator and feed facilities of the Durrill Elevator & Feed Mill here. The plant was destroyed by fire Aug. '24. The new elevator will have a capacity of 35,000 bu.

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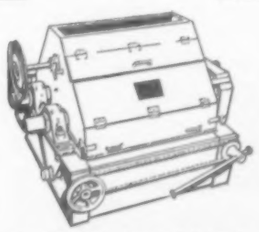

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Let's face it—except for fond memories and affection, none of us would consider returning to the "good old days" when grandmother had to stoke the stove for a little extra warmth. This is the push button age of thermostats and new concepts.

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PRICE PROSPECTS

(Continued from page 1)

Co., Chicago; L. S. Riford, Beacon Milling Co., Cayuga, N.Y.; J. D. Sykes, Ralston Purina Co., St. Louis, and W. E. Glennon, AFMA president and chairman of the industry advisory group.

Representatives of other national industry organizations in the industry advisory group are Don Turnbull, executive secretary of the APHF; Frank Frazier, broiler council secretary; M. C. Small, turkey federation secretary, and Dr. James M. Gwin, PENB manager.

The AFMA said that the reports differ from material available from other sources in that they are intended to be phrased in direct, practical language, giving probable trends in prices "should certain conditions prevail." They are being given wide distribution by AFMA to press, radio and television editors and to members of the other four cooperating trade organizations. The five sponsoring organizations wish to disseminate the reports to as many poultry producers as possible, and the AFMA suggests that feed manufacturers might like to reproduce the report and send it to salesmen and dealers.

Complete Report

The complete report follows:

EGGS: Egg prices during the fall and winter months of 1957-58 are unlikely to improve from a year earlier unless egg supplies then are smaller than the record fall production of last year. To get a decrease in egg production, producers would have to make a cut of more than 8% from last year's number of chicks raised for laying flock replacement.

A cut of at least 8% in chicks raised is necessary to provide the same egg supply next fall because:

1. There has been a steady year-to-year increase in egg production per layer during the fall and early winter months.

2. In the years when producers reduce the number of replacement chicks they raise, they tend to house a larger number of pullets from each 100 chicks purchased. Also, they hold their hens longer and save more of them for a second year of laying.

Demand prospects for eggs in 1957 appear to be about the same as existed in 1956. Consumption has been running about an egg a day per person, and consumer incomes have been at record high levels. Since gains in the demand for eggs are achieved slowly in a stable economy, an increase in the production of eggs in the fall and winter of 1957-58 is likely to result in lower prices than a year earlier.

With a normal feed crop and no marked shift in government price policy, the outlook is for slightly lower feed costs for the year starting Sept. 1.

Although egg prices may fluctuate from present levels, there is little chance for substantial egg price improvement during the first six months of 1957. With record supplies of carbohydrate and protein feed available, there is little to indicate significant changes in feed prices until new crop factors affect the feed markets. Government decisions affecting CCC holdings, drouth assistance and other programs will influence feed prices during the period.

BROILERS: The improved price prospects during the first quarter of 1957 plus the rate of egg settings in early January will mean market supplies after March will again be substantially above a year earlier. With continued strong demand in prospect, an increase of perhaps 5 to 10% in broiler market supplies during the April-June quarter of 1957 could move at prices equal to 1956 levels. Since it currently appears that the industry is heading for a supply in excess of 10% above a year ago, prices during the second quarter will average below those received in 1956.

Broiler prices will probably increase into March, rising perhaps as much as 3 to 5¢ above the December levels. Market supplies during January and February will be about 9% above levels of the same period in 1956. During March, because of a sharp cut-back in placements around the Christmas holidays, supplies will be only 6% above the year ago level. This compares with an increase during the last quarter of 1956 of 15 to 25% above a year earlier.

Feed prices during the first half of 1957 will average about the same as a year earlier. Chick prices during this period will probably be slightly below a year ago. Except as improvements in efficiency are made, the anticipated price and cost situation will result in lower broiler returns during January through June as compared to the like period in 1956.

TURKEYS: Early indications point to a turkey crop of 84 million birds, up 10% from the record crop of 1956. (Feedstuffs, Jan. 19.) A crop of this size will move to market at substantially lower prices than were received for the 1956 crop. Any probable declines in feed prices will come too late to help turkey growers during the heavy feeding season of 1957.

Factors leading to these conclusions are:

1. Cold storage holdings on Dec. 31, 1956 were 165 million pounds, a record high, compared with 95 million pounds a year ago. Last year, relatively small storage stocks provided an opportunity to market early turkeys at very profitable prices. This assisted in establishing a favorable tone at the start of the 1956 heavy marketing season.

2. Additional breeder hens coming to market will add 7 to 8 million pounds more turkey meat than from that source last year.

3. Heavy and light breed poults hatched during the last four months of 1956 exceeded the like 1955 period by over 2 million head, about 50% above a year earlier. These birds will be marketed during the first half of 1957 in competition with storage stocks and breeder turkeys.

4. Eggs in incubators on Jan. 1 were up 42% from Jan. 1, 1956, or more than a million more poults.

5. Supply of breeder hens is large. Intentions report indicated 13% more than a year earlier.

6. As mentioned above, farmers intend to raise 10% more turkeys than in 1956.

7. Although demand will likely continue good, there are no signs that point to any improvement in demand that will help growers during the heavy marketing season. No significant changes are anticipated in competitive meat supplies.

Production of Millfeed Falls Off

Production of millfeed in tons for week ending Jan. 18, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour production.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Jan. 14-18	29,126	772,190	16,029	404,658	12,289	324,862	56,444	1,501,710
Prev. week	‡29,569		‡15,212		12,228		‡57,009	
Two wks. ago	25,924		12,178		11,179		48,981	
1956	26,150	726,466	12,240	395,025	10,611	262,648	49,001	1,396,139
1955	25,901	724,588	13,842	495,229	10,717	311,769	50,460	1,531,586
1954	25,198	668,434	15,389	408,365	11,685	295,316	52,212	1,372,105
1953	24,313	718,419	16,305	447,430	11,206	295,478	51,824	1,461,317

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

AID PROPOSAL

(Continued from page 1)

feel that they must have protein can obtain it at reasonable prices in drouth (mixed) feed or by buying it as such."

Protein meals have not been a part of the emergency drouth feed-grain program for the past three years. However, cottonseed meal was included in the program for a while, and this was a contributing factor in sharply rising protein meal prices at that time. The present program involves a subsidy on grains which are sold straight or as a specific part of a drouth mixed feed. If proteins should be included in the program, outright purchases in the market place or a subsidy plan would be necessary.

Reviewing the drouth feed aid situation, AFMA pointed out that the first program announced in July, 1953, made available government-owned stocks of thousands of tons of cottonseed meal at a price of $25 per ton. Cottonseed meal was made available to feed manufacturers serving the drouth area at the same price on a replacement basis where cottonseed meal was used in a certified drouth feed. Between July and December, 1953 (when cottonseed meal was discontinued), some 750,000 tons were moved into the drouth program.

Price Climb

When the program was started in July, 1953, cottonseed meal was about $61 a ton. The price in August, 1954, was $77 a ton. Soybean meal in July, 1953, was about $67 a ton. By February, 1954, the price was $84, and by May it had climbed to $100.

The strength in protein meal prices was not entirely due to the rapid depletion of CCC protein stocks as a result of the drouth program, AFMA said, but it was one of the contributing factors.

Today, it was noted, CCC has no inventory of protein meals. And protein is not a surplus commodity. The AFMA cited the report of its College Feed Survey Committee indicating that protein supplies will not be in excess of requirements for the current year ending next Oct. 1.

"Should the U.S. government decide at the present time to make protein meals available at reduced prices to eligible feeders in the drouth area, it would require an outright purchase in the market place or a subsidy arrangement," AFMA said.

"Since proteins are not a surplus commodity, a government purchase or a subsidy on any sizeable tonnage would obviously reflect immediately in the market place."

The present feed program, designed to help farmers and ranchers maintain basic livestock herds, involves four designated surplus grains—corn, sorghum grains, oats and barley. These are available as straight grains or as part of mixed feeds at a discount of $1.50 cwt. This amounts to $30 ton on straight grains or $22.50 ton on a manufactured feed containing 75% grain.

MIDWEST

(Continued from page 1)

tion theme chosen for this year's meeting by the arrangements committee and emphasis will be placed on the future outlook for the industry in all of the various topics discussed by speakers during the three-day session.

As the feature of a special press and radio conference on the afternoon of Feb. 17, there will be four demonstrations of different aspects of feeding under the direction of well-known college scientists. Dr. Damon Catron, Iowa State College, will handle the pig demonstration; Dr. J. R. Couch, Texas A&M College, will have charge of the turkey demonstration; Dr. E. L. Stephenson, University of Arkansas, will make the broiler presentation, and Dr. R. E. Moreng, Colorado A&M College, will direct the caged layer phase. Live displays will be a part of this feature presentation of the progress made in the development of scientific feeding.

Details of the various convention sessions which will take place at the Broadmoor Hotel are as follows:

February 16

12 Noon —Board of directors' meeting.
8:00 p.m.—Hockey game, Broadmoor Ice Palace (limited number of tickets available).

February 17

9:00 a.m.—Registration, main floor near ballroom.
10:00 a.m.—Formula feed conference chairmen.
10:00 a.m.—Feed control officials.
12 Noon —Joint luncheon, directors, feed control officials and conference chairmen.
2:00 p.m.—Conference for agricultural press and radio, Southeastmoor basement. Demonstrations by: Pigs—Dr. Damon Catron, Iowa State College; Turkeys—Dr. J. R. Couch, Texas A&M College; Broilers—Dr. E. L. Stephenson, University of Arkansas; Cage Layers—Dr. R. E. Moreng, Colorado A&M College.
2:00 p.m.—Premiere showing, Armour & Co., Little Theatre.

February 18

8:00 a.m.—Registration desk opens.
9:30 a.m.—Convention convenes, Little Theatre; Invocation—Rev. Arthur Pierpont, Colorado Springs; Welcome—Harry Blunt, Mayor, Colorado Springs.
9:45 a.m.—"The Forward Look," annual business session.
10:00 a.m.—Ladies' Brunch, Terrace Lounge.
10:30 a.m.—"The Forward Look—The Most Pertinent Needs in Poultry & Livestock"; Broilers—Dr. E. L. Stephenson, University of Arkansas; Dairy—Prof. F. W. Atkeson, Kansas State College; Swine—Dr. Leslie Johnson, Iowa State College; Dry Lot—Dr. W. H. Pfander, University of Missouri; Sheep—Prof. W. J. Loeffel, University of Nebraska; Laying Hens—Dr. Rollin Thayer, Oklahoma A&M College; Turkeys—Dr. J. R. Couch, Texas A&M College; Range—Dr. Lloyd Washburn, Colorado A&M College.
11:30 a.m.—"The Forward Look in Selling," Victor E. Stromsted, Dale Carnegie Courses.
12 Noon —"The Forward Look in Coordinating Our Efforts," Oscar Straube, president, Pay 'Way Feed Mills, chairman of the board, American Feed Manufacturers Assn.

Afternoon

OPEN —Exhibits Little Theatre and Ballroom.

Evening

5:30 p.m.—Social hour, ballroom—hosts, Allied Trades.
6:30 p.m.—Annual banquet—featuring "Lum" of Lum and Abner team; Chester Lauck, Continental Oil Co., Houston.

February 19

9:30 a.m.—Convention convenes — Little Theatre.
10:00 a.m.—"The Forward Look in Feed Financing," Horace Steele, vice president, Deposits Guarantee and Trust Co., Jackson, Miss.
10:30 a.m.—"The Forward Look in Serving the Feeders," W. A. Ruhmann, farm director, WBAP-TV, Ft. Worth.
11:00 a.m.—"The Forward Look in Training Youth for Our Industry," J. D. Sykes, Ralston Purina Co., St. Louis.
11:30 a.m.—"The Forward Look From U.S. Department of Agriculture," James Browning.
12:30 p.m.—"The Wind Up," luncheon, featuring Everett Conover—"The Care and Feeding of Wives."

PLACEMENTS

(Continued from page 1)

13% above the same week a year ago. Increases from the previous week were reported in 10 of the 22 states.

Here in the Delmarva area, the average price paid per pound on the farm for broilers was 17.84¢. A week earlier the price was 18.07¢.

According to the Maryland-Delaware Crop Reporting Service, broiler chick placements in Delmarva at 3,751,000 for the week ending Jan. 19 were 3% more than a week earlier and 32% above the same week last year. Settings at 4,200,000 were 2% less than the previous week but 24% above the same week of 1956.

Twenty percent broiler feed rose nearly $1 ton last week going to $94.42. A higher price for feed and a lower price for poultry made a less favorable meat-feed ratio. A pound of broiler meat would only buy 3.8 lb. feed, compared to 3.9 the week earlier.

The national stock of frozen poultry is trimming down according to a Dec. 31 inventory but is still running ahead of the 1951 to 1955 average.

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Chicago: Demand fair; supply moderate; straight A feeding oil, with 10,000 units vitamin A per gram 10@12¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 15¢ lb.; 300 D, 2,250 A 17¢; 300 D, 1,500 A 15¢; 300 D, 750 A 14¢.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 32½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 750 A 18½¢.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 32¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13⅝@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 23¢.

ALFALFA MEAL

New Orleans: Demand dull; trend strong; supply light; 17% dehydrated, vitamin A guaranteed $74@75, pelleted $72@73; non-guaranteed $68@70, 15% $66@66.

Chicago: Demand slow; supply tight; 17% dehydrated, with 100,000 units vitamin A guaranteed $73.50@74; 17% with no A guaranteed $65.50@66; 12% suncured $62@52.50.

St. Louis: Demand slow; trend lower; supply adequate; dehydrated, 17%, 100,000 A $69.75 ton; suncured No. 1 fine ground, 13% $50 ton, f.o.b. St. Louis.

Boston: Demand active; supply fair; dehydrated 17% $81.75; suncured, 13% $66.40, South Dakota.

Seattle: Demand steady; supply good; trend unchanged; 15% protein suncured $45 ton, delivered, carlots; 136,000 A unit dehydrated $66 ton, delivered, carlots.

Omaha: Demand fair; supply limited; 17% dehydrated, non-A, papers or burlaps $60; 17% dehydrated, 100,000 A, papers or burlaps $67.50.

Kansas City: Demand active; trend very firm with over-all light feed demand said to be holding back the price; supply tight; 17% protein dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival $85, sacked; 15% protein, 125,000 units A $88, sacked; 100,000 units A pellets $61, bulk; non-guaranteed A meal $60@62; suncured—demand fair, supplies adequate; No. 1 fine ground $47@48, No. 1 ¼-in. $42@43, No. 2 ¼-in. $40@42.

Minneapolis: Market is steady, with trade moderate. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $70@72, granules and oil treated $69@69.50, bulk; 18% dehydrated, 125,000 units of vitamin A guaranteed $73, granules and oil treated $72, bulk.

Buffalo: Demand poor; trend steady to higher; supply fair; $82, sacked, Boston.

Denver: Demand slow; trend steady; supply ample; 17%, 100,000 A $61.

Portland: Demand slow; supply ample; trend unchanged; 15% suncured $45, f.o.b. Idaho; 15% suncured $46, f.o.b. California; dehydrated $54@56, f.o.b. California.

Philadelphia: Demand dull; supply light; 17% dehydrated, $81 with 100,000 units A guaranteed; $73 with no A guarantee.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $76.75; 17% dehydrated no A $71.75; 13% fine suncured $41@59.

Los Angeles: Demand fair; trend steady; supply ample; 15% suncured $45@46.

Ft. Worth: Demand good; supply limited; California origin dehydrated meal or pellets, truck $69, January-first half February, delivered Ft. Worth; suncured: South Dakota, No. 1 13%, protein, ¼ in. grind, rail shipment $52.50, prompt; truck, Colorado No. 1 $65, delivered Ft. Worth.

Memphis: Demand slow; trend slightly higher; supply limited; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $72.50.

ALFALFA PELLETS

Denver: Demand slow; trend steady; supply ample; 17%, 100,000 A $58.

ANIMAL FATS (STABILIZED)

Ft. Worth: Demand steady; supply sufficient; prime tallow, tank cars 7¾¢ lb.; drums 8¾¢, f.o.b. north Texas packing plants, with returnable drums.

Los Angeles: Demand fair; trend steady; supply ample; bleachable fancy tallow 7½¢; yellow grease 6½¢.

Kansas City: Demand steady; trend firm; supply adequate; prime tallow 7¼¢ lb.; bleachable fancy yellow 7¼¢ lb.

Denver: Demand good; trend steady; supply adequate; prime tallow 6¾¢.

Louisville: Demand fair; trend steady; supply ample to good; bleachable white 7¾¢ lb.; white tallow 7½¢ lb.; yellow grease 6½¢ lb.

Chicago: Demand and supply fair; bleachable fancy tallow, tank truck or carlots 7¾¢ lb.; yellow grease 6¾¢.

BARLEY FEED

Baltimore: Demand good; supply light; $54.50.

New Orleans: Demand fair; trend steady; supply ample; $61.50@62.50.

Chicago: Demand good; supply light; $45.

Boston: Demand slow; supply adequate; pulverized $53.25.

Seattle: Demand fair; trend firm; supply sufficient; whole barley $61 ton, ground barley $61 ton, both ex-warehouse, l.c.l., sacked.

Milwaukee: Demand and supply fair; needles $1.07@1.24; ground $37 ton, sacked.

Portland: Demand good; supply ample; trend unchanged; rolled $63, ground $61.

Ogden: Supply normal; rolled $57@62, whole barley $50@55.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $2.50; standard ground $2.46.

Philadelphia: Demand dull; supply fair; pulverized $52.50.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $15.50; fine granular, 80-100 mesh $12.75; powder 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 30 ton carlot: 80 granular $12.50 net; 200 mesh fine $12.25 net.

Denver: Demand slow; trend unchanged; supply ample; $26.50 ton, f.o.b. Denver warehouse.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply normal; $92.50@97.50 ton.

BLOOD MEAL

Cincinnati: Demand fair; trend higher; supply adequate; $120.

Ogden: Supply average; $97.50 ton in 100 lb. bags, f.o.b. Ogden.

Portland: Demand slow; supply ample; trend unchanged; $95.

Seattle: Demand slow; supply good; trend slow; $80 ton, ex-warehouse, truck lots.

Los Angeles: Demand fair; trend steady; supply ample; 5¢ a unit of ammonia.

Chicago: Demand fair; supply adequate; $120 ton, guaranteed 80% protein.

Louisville: Demand fair to good; trend steady; supply adequate; $92.50@97.50 ton.

New Orleans: Demand slow; trend steady; supply adequate; $90@95.

BONE MEAL (STEAMED)

Louisville: Demand fair; trend steady; supply normal; $75@80 ton.

Chicago: Demand slow; supply adequate; $70@85.

Ft. Worth: Demand fair; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Seattle: Demand and trend steady; supply good; $85 ton, ex-dock, truck lots.

Denver: Demand slow; trend unchanged; supply ample; $80, f.o.b. West Coast.

Omaha: Demand strong; supply limited; $85.

Buffalo: Demand and supply good; trend steady; $85 ton, sacked.

Los Angeles: Demand fair; trend steady; supply ample; $89.50, domestic.

Cincinnati: Demand good; supply short; trend strong; $87.50 ton, sacked, f.o.b. Cincinnati.

Portland: Demand slow; supply ample; trend unchanged; $90.

St. Louis: Demand fair; trend steady; supply adequate; $90@95 ton, sacked.

New Orleans: Demand fair; trend steady; supply adequate; $77.50@85.

Boston: Demand and supply steady; $85.

BREWERS DRIED GRAINS

Boston: Demand active; supply tight; 26% $57.75@59, bulk; 22%, sacked $64@65.

Philadelphia: Demand dull; supply light; $65.

Milwaukee: Demand good; supply fair; $54.50.

Louisville: Demand good; trend strong; supply light; $57@58 ton.

Buffalo: Demand and supply fair; trend steady; $56.75, bulk, Boston.

St. Louis: Demand good; trend higher; supply ample; $49 ton bulk, $54 ton sacked.

New Orleans: Demand slow; supply adequate; trend steady; $57@60.

Chicago: Demand slow; supply light; 26% $55@55.50.

Cincinnati: Demand fair; trend steady; supply adequate; $62@62.50.

Los Angeles: Demand fair; trend steady; supply ample; f.o.b. Van Nuys $52 bulk.

Ft. Worth: Demand slow; offerings moderate; 26% $61@62, delivered Ft. Worth.

BREWERS DRIED YEAST

Los Angeles: Demand good; trend steady; supply adequate; 9½¢, 5 tons or over; 10¢ in less lots.

Portland: Demand slow; supply ample; trend unchanged; $8 cwt.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11¼¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11¼¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11¼¢.

New York: Carlots 9¼¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10¼¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10¼¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11⅛@12¢ lb. in less than ton lots.

Milwaukee: Demand good; supply limited; 10⅛@11⅛¢ lb. in carlots; 10¾@12¼¢ lb., l.c.l.

Buffalo: Demand poor; trend easier; supply ample; $10.20 cwt.

Omaha: Demand good; supply adequate; 11¢ lb.

Denver: Demand slow; trend unchanged; supply ample; $11 cwt.

Louisville: Demand good; trend steady; supply normal; 10¢ lb.

Chicago: Demand good; supply limited; 10@11⅛¢ lb., in carlots; 10¾@12½¢, l.c.l.

Boston: Demand good; supply fair; 11¢ lb.

BUTTERMILK-CONDENSED

Boston: Demand fair; supply light; $3.75 cwt.

Louisville: Demand slow; trend steady; supply ample; $4.25 cwt.

New Orleans: Demand fair; trend steady; supply ample; $4.75@5.50.

Chicago: Demand fair; supply adequate; $3.25@3.50 cwt. in carlots.

Los Angeles: Demand fair; trend steady; supply ample; 100 lb. drums $5.50; large barrels $4.75.

Philadelphia: Demand dull; supply fair; $4.35 barrels.

Ogden: Supply normal; $4.90, 100-lb. drum.

Portland: Demand slow; supply ample; trend unchanged; $4.75 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $13.97, flour $9.72.

Buffalo: Crystals $14.74, flour $10.47.

Toledo: Crystals $16.39, flour $12.14.

Boston: Crystals $16.18, flour $10.93.

Limecrest, N.J.: Crystals $9.75, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $56@9.

Minneapolis: Plain $13; iodized (⅛ lb. KI per ton) $14.45; iodized manganesed $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

Seattle: Demand and trend steady; supply good; $14 ton, ex-warehouse, truck lots.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

CHARCOAL

Los Angeles: Demand slow; trend steady; supply adequate; poultry charcoal, oak, 40 lb. bags $170 ton, l.c.l.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand and supply light; $95, nominal.

COCONUT MEAL

Los Angeles: Demand slow; trend weak; supply ample; cake, ex-dock, February $68@69.

Seattle: Demand slow; trend steady; supply limited; $72 ton, ex-dock, 30-day shipment from Philippines.

Portland: Demand slow; supply ample; trend unchanged; $72.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply ample; 600 D, 2,250 A 21¢ lb.; 300 D, 2,250 A 20¢; 300 D, 1,500 A 17½¢.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14⅝@15½¢, 1,500 A 16⅝@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Boston: Demand active; supply very tight; 4¢ lb., nominal.

New York: Demand good; trend upward; supply tight; 4⅛@4⅜¢ lb., f.o.b. eastern shore.

New Orleans: Demand good; trend steady; supply limited; 50% solids $85@90, Gulf and East.

Los Angeles: Demand good; trend steady; supply limited; 4¢.

CORN GERM MEAL

St. Louis: Demand good; trend higher; supply adequate; $49 ton bulk, $54 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $57.39, meal $77.39.
Atlanta: Feed $65.21, meal $85.21.
Birmingham: Feed $63.36, meal $83.36.
Boston: Feed $62.12, meal $82.12.
Chicago: Feed $51, meal $71.
Cleveland: Feed $58.42, meal $78.42.
Denver: Feed $60.59, meal $80.59.
Ft. Worth: Feed $59.34, meal $79.34.
Indianapolis: Feed $55.94, meal $75.94.
Kansas City: Feed $51, meal $71.
Louisville: Feed $57.80, meal $77.80.
New Orleans: Feed $60.75, meal $80.75.
New York: Feed $61.71, meal $81.71.
Norfolk: Feed $61.09, meal $81.09.
Philadelphia: Feed $61.30, meal $81.30.
Pittsburgh: Feed $59.34, meal $79.34.
St. Louis: Feed $51, meal $71.

CORN OIL MEAL

Louisville: Demand slow; trend steady; supply normal; $59.92 ton.

Cincinnati: Demand fair; trend higher; supply adequate; $59.75@60.

COTTONSEED OIL MEAL

Portland: Demand slow; supply ample; trend unchanged; $76.

Ogden: Supply normal; 41% $70@75.

Philadelphia: Demand fair; supply light; $75.

Cincinnati: Demand fair; trend higher; supply somewhat limited; solvent $70.25; old process $70.75.

Ft. Worth: Demand good; offerings immediate very light; carlots, 41% old process $66, f.o.b. central Texas mills; solvent 41% low gossypol $64.50, January, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $35@36, delivered Ft. Worth.

Los Angeles: Demand and trend steady; supply limited; $65, local.

New Orleans: Demand slow; trend steady; supply ample; 41% old process $78@78.50.

Louisville: Demand slow; trend steady; supply ample; old process $66.75 ton; new process not quoted.

Wichita: Demand slow; supply sufficient; 41% old process $67.50; solvent $66@67.

Chicago: Demand slow; supply plentiful; hydraulic $68, solvent $69.

Boston: Demand slow; supply good; $76.50@77.50.

Memphis: Demand fair; trend dull; supply adequate; prime 41% protein, old process $57.50, sacked; new process, 41% solvent $57, sacked.

Atlanta: Demand fair; trend steady; supply ample; 41% $65, sacked, immediate.

Seattle: Demand and trend steady; supply good; 41% protein expeller $76 ton, delivered, truck lots.

Buffalo: Demand and supply fair; trend steady; $79.25, sacked, Boston.

Omaha: Demand fair; supply ample; 41% solvent $71.50, pellets $74.50.

Denver: Demand slow; trend steady; supply ample; 2% fat $71.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand normal; trend steady; supply normal; 10½@11¢ lb.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb.; ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 23¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $64.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $58 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $65 in bulk.

DICALCIUM PHOSPHATE

Denver: Demand slow; trend unchanged; supply ample; $83.50, f.o.b. plant, St. Louis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $89.55 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $90.30, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18⅛%, maximum fluorine .01% guaranteed $79.55, f.o.b. Trenton in 100-lb. multiwall bags.

Columbia, Tenn.: Minimum phosphorus 18⅛%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Demand fair; supplies adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $79.55 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $89.55; 21% phosphorus, 20,000 lb. or more $90.30, basis Chicago Heights and Nashville, less than 20,000 lb. $100.30; bulk boxcars or hoppers, $3 net ton less than bagged material.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18⅛%, granular $79.55; freight equalized with closest producing point, carload basis.

Cincinnati: 18% phosphorus $88@89.

DISTILLERS DRIED GRAINS

Philadelphia: Demand dull; supply light; $69.

New York: Demand good; trend upward; supply limited; light $63, bulk, Boston; dark $64, bulk, Boston; plus $5 for sacking; solubles $80, sacked, Boston.

Buffalo: Demand good; trend higher; supply poor to fair; $66, bulk, Boston.

Cincinnati: Demand fair; trend higher; supply somewhat limited; $65@70.

Boston: Demand active; supply tight; domestic light $69.50, February shipment; dark $69; Canadian, medium $69.

Louisville: Demand good; trend strong; supply light; bourbon grains, light $61, dark $61, solubles $80.

DRIED BEET PULP

New Orleans: Demand good; trend steady; supply limited; $57@57.50, papers.

Cincinnati: Demand fair; trend steady; supply adequate; $62@63.

Ogden: Supply normal; $45@50 ton.

Los Angeles: Demand active; supply limited; trend steady; $59.50@60.50 in paper bags.

Seattle: Demand good; supply sufficient; trend unchanged; $52 ton, delivered, carlots, sacked.

Chicago: Molasses pulp $57.10 in papers; plain pulp $60.

Buffalo: Demand fair; supply poor; no quotations.

Atlanta: Demand slow; trend steady; supply limited; $76.50, sacked, immediate.

Boston: Demand slow; supply limited; $67.50@69.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth.

Milwaukee: Demand and supply fair; molasses $57, plain $57.

DRIED BUTTERMILK

Ogden: Supply normal; $7.25, 100-lb. bag.

Ft. Worth: Demand very slow; supply light; local production $12 cwt., f.o.b. Ft. Worth.

Los Angeles: Demand fair; trend steady; supply ample; 11¢.

Wichita: Demand slow; supply adequate; $8 cwt.

Minneapolis: Supplies are plentiful, and with demand limited, prices eased off. Quotations: $7.75@8.50 cwt.

Buffalo: Demand good; trend steady; supply limited; $9.05 cwt.

Louisville: Demand fair; trend steady; supply normal; 9@9½¢ lb.

New Orleans: Demand slow; trend steady; supply ample; $12@13 cwt.

Chicago: Demand light; supply fairly good; medium acid $8@8.25; sweet cream $8.50@9 cwt. in carlots.

Boston: Demand and supply fair; 11¢ lb.

Milwaukee: Demand and supply fair; $10.75.

DRIED CITRUS PULP

Los Angeles: Demand active; trend steady; supply scarce; f.o.b. southern California producers' plants: orange $50.50 sacked, $45.50 bulk.

Buffalo: Demand and supply fair; trend steady; $35, sacked, f.o.b. Florida points.

Atlanta: Demand fair for pulp, slow for meal; supplies ample; trend steady; pulp $43, meal $38, sacked.

Boston: Demand poor; supply adequate; $55.

New Orleans: Demand slow; trend steady to higher; supply adequate; $46@48, Florida origin.

DRIED SKIM MILK

Milwaukee: Demand and supply fair; $11.75.

Los Angeles: Demand fair; trend steady; supply ample; $13.

Cincinnati: Demand fair; trend steady; supply adequate; 11@12¢.

Philadelphia: Demand dull; supply fair; $12.

Buffalo: Demand fair; trend steady; supply ample; $10.35 cwt.

Minneapolis: Market steady at $10.50@11 cwt.

Portland: Demand slow; supply ample; trend unchanged; $12.50.

Louisville: Demand fair; trend steady; supply normal; 11½@12½¢ lb.

New Orleans: Demand good; trend firm; supply adequate; L.c.l. $12@12.50 cwt.

Chicago: Demand fair; supply adequate; $10.25@10.75 cwt. in carlots.

Boston: Demand good; supply fair; l.c.l. 12@12½¢ lb.

Ogden: Supply normal; $15.15, 100-lb. drum.

DRIED WHEY

Boston: Demand steady; supply adequate; $5.90 cwt.

Louisville: Demand fair; trend steady; supply normal; 6½¢ lb.

New Orleans: Demand fair; trend firm; supply adequate; $6.25@6.90 cwt.

Ogden: Supply normal; $6.90, 100-lb. bag.

Philadelphia: Demand and supply fair; $6 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; $5.50 cwt.

Los Angeles: Demand fair; trend steady; supply ample; plants $5.55; f.o.b. Los Angeles warehouses $6.10.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6.25 cwt., sacked, delivered Ft. Worth or any Texas points or in ton lots, f.o.b. warehouse, Ft. Worth.

Chicago: Demand fair to good; supply tight; $5.20@5.45 cwt. in carlots.

Buffalo: Demand and supply fair; trend steady; $6 cwt., delivered.

Seattle: Demand and trend steady; supply good; $6.50 cwt., ex-warehouse, l.c.l.

Denver: Demand slow; trend unchanged; supply ample; $7 cwt., $6 carlots.

Kansas City: Demand and supply normal; trend steady; straight grade $6.25 cwt., delivered, or $5.25 cwt., f.o.b. plant, plus freight, whichever is lower; partially delactosed $6.40.

Minneapolis: Market unchanged at $5@5.50 cwt.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply steady; crude protein minimum $85; 70% digestible $80, f.o.b. Maine; $88, f.o.b. Connecticut and Delaware.

FISH MEAL

Boston: Demand very active; supply very tight; $142@145.

Milwaukee: Demand and supply fair; 60% $162.

Chicago: Demand fair to good; supply fair to short; eastern menhaden fish meal, 60% protein $142; western blended, 60% protein $132; Gulf, no offerings; Northwest herring-salmon blend $129@132; Canadian herring, 73% protein $2@2.15 a unit of protein, all f.o.b. producing points; 60% blended $154, delivered Midwest points.

Louisville: Demand slow; trend steady; supply normal; $150@155 ton.

Buffalo: Demand good; trend steady; supply limited; 60% protein menhaden $145 ton, bulk; $150, sacked.

Minneapolis: Market stronger on 60% and somewhat easier on 70%. Quotations: 70% herring meal $2 a unit of protein, West Coast; 60% meal $154@156, Minneapolis.

Seattle: Demand improved; trend firm; supply fair; $2.25 a unit protein, delivered, carlots, Canadian herring.

Denver: Demand fair; trend stronger; supply ample; $2.15, f.o.b. Seattle.

Atlanta: Demand slow; trend steady; supply limited; 60% $153, sacked, immediate, nominal.

New Orleans: Demand good; trend steady; supply scarce; 60% menhaden $142, burlaps, January-February; scrap $137@138, burlaps.

Ft. Worth: Demand good; supply limited; 60% Angola, f.o.b. Houston, January $144.50; Canadian herring $2 a unit protein, f.o.b. N. W. Canada.

Los Angeles: Demand good; trend steady; light offers; $2.25 a unit of protein.

Cincinnati: Demand fair; trend steady; supply adequate; $155@160.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Portland: Demand slow; trend higher; supply short; f.o.b. Vancouver $2.15.

HAY

Portland: Demand good; supply ample; trend unchanged; $34@35.

Ogden: Supply normal; $1.10 bale; $21@24 ton in the barn.

Philadelphia: Demand dull; supply fair; $28@29.

Ft. Worth: Demand fair; supply adequate; carlots, baled, No. 1 alfalfa $46.50@47.50, No. 2 $44.50@46.50; prairie No. 2 $40.50@42.50, delivered TCP on 50% drouth freight rate.

Los Angeles: Demand fair; trend steady; supply ample; U.S. No. 1 $35@36; U.S. No. 2, leafy $33@34; U.S. No. 2, green $32@33; U.S. No. 2 $30@31.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy hay $22.50; No. 1 red clover $24; No. 1 second cutting green alfalfa $26; No. 1 red clover mixed $26; wheat or oats straw $22.

Seattle: Demand slow; trend unchanged; supply good; $35 ton, delivered, truck lots, U.S. No. 2 green.

Denver: Demand slow; trend steady; supply ample; baled alfalfa $31@32; baled mountain hay $38@40.

St. Louis: Demand fair; trend steady; supply adequate; No. 1 alfalfa, first and second cutting $18@20 ton; No. 1 alfalfa, third cutting $23@28 ton; No. 1 alfalfa, fourth cutting $28@30 ton; prairie (Kansas) $39@42 ton; timothy and clover mixed (Missouri and Illinois) $24@26 ton; wheat straw $16@17 ton.

Louisville: Demand improved; trend steady; supply good; No. 1 hay, any variety $25 ton; No. 2 hay, any variety $23 ton; straw $18@20 ton.

Wichita: Demand slow; supply very light; prairie $32, alfalfa $37.50@40.

New Orleans: Demand good; trend steady; supply adequate; timothy $66@68; timothy and clover mixed $70@72; Kansas prairie $58@60; No. 1 alfalfa $65@70.

Boston: Demand steady; supply adequate; No. 2 timothy $36@38.

HOMINY FEED

New Orleans: Demand fair; trend higher; supply adequate; $58@58.50.

Louisville: Demand fair; trend strong; supply ample; $54.20 ton.

Chicago: Demand good; supply tight; $50.50@51.

Seattle: Demand fair; trend steady; supply good; $61 ton, delivered, sacked, carlots.

Kansas City: Demand fair; trend firm; supply adequate; $45, yellow, sacked, with $3.50 more for sacks.

Buffalo: Demand and supply fair; trend steady; $56.50, bulk, Boston.

Memphis: Demand nil; trend unchanged; supply adequate; white $56, yellow $56.

Boston: Demand improved; supply irregular; spot $57, in bulk; February shipment $56.50, in bulk.

Milwaukee: Demand good; supply tight; $51.50@52, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $52.50@53.

LINSEED OIL MEAL

Ft. Worth: Demand slow; supply light for February; carlots, 34% or better, February $77.39, March-April $76.39, delivered Ft. Worth; pellets $2.50 premium.

Los Angeles: Demand good; trend steady; scarce offers; $74@76, resale.

Cincinnati: Demand fair; trend steady; supply adequate; new process $68.50@69.50; old process $73.50@74.50.

Philadelphia: Demand and supply fair; $74.50.

Seattle: Demand good; trend firm; supply limited; $82 ton, delivered, carlots, 36% protein solvent type.

Denver: Demand fair; trend steady; supply ample; February delivery $77.

Kansas City: Demand slow; trend steady; supply tight for nearby, more for later; $52.50@53 for January and $52.50 for February, bulk, Minneapolis.

Minneapolis: Market is holding steady, with resellers handling most of trade and offerings from mills light. Directions are good. Quotations: 34% $52.50@53.50, bulk, Minneapolis; 22% flaxseed screenings oil feed $30.

Omaha: Demand fair; supply ample; 32% expeller $73.50, pellets $76; 34% solvent $67, pellets $69.50.

Portland: Demand good; trend higher; supply short; $82, sacked, in carlots from Minneapolis; all currently available.

Boston: Demand slow; supply fair; $74.65.

Milwaukee: Demand good; supply fair; old process $69.25; new process $62.25.

New Orleans: Demand slow; trend firm; supply light; 32% or higher $75@75.50.

Louisville: Demand fair; trend steady; supply normal; old process $76.70, new process $69.70.

Wichita: Demand fair; supply sufficient; 34% $71.

Chicago: Demand fair; supply adequate; solvent $64, expeller $72.

MALT SPROUTS

Chicago: Demand slow; supply adequate; No. 1 $49@49.50.

St. Louis: Demand fair; trend steady; supply adequate; No. 1 bulk $44 ton, No. 1 sacked $49 ton, No. 2 bulk $42 ton.

New Orleans: Demand fair; trend steady; supply adequate; $49@51.

Boston: Demand spotty; supply adequate; No. 1 $61.20.

Milwaukee: Demand good; supply fair; oddweights $49, evenweights $50.

Cincinnati: Demand fair; trend steady supply adequate; No. 1 $55@56.

MEAT SCRAPS

Portland: Demand good; supply ample; trend unchanged; $1.50@1.55.

Ogden: Supply normal; $82.50 ton in 100-lb. bags.

Cincinnati: Demand good, supply fair; trend strong; 50% $74.50 ton, sacked, f.o.b. Cincinnati.

Kansas City: Demand fair; trend firm, prices stronger on excellent demand for unground materials and higher material costs; supply adequate; 50% meat and bone scraps $75@78, sacked.

St. Paul: Market unchanged; quotations: 50% meat and bone scraps $78@82.

New York: Demand and supply good; trend steady; 50% $67.50, 55% $72.50, bulk; 50% $70.50, 55% $75.50, sacked.

Buffalo: Demand good; trend higher; supply ample; 50% meat scraps $75 ton, bulk; $80, sacked.

Denver: Demand good; trend stronger; supply fair; 50% $70.

Seattle: Demand and trend steady; supply good; $75 ton, ex-warehouse, 50% protein.

Omaha: Demand good; supply ample; $77.50.

Los Angeles: Demand and trend steady; supply ample; $1.55 a unit of protein.

Ft. Worth: Demand good; supply ample; meat and bone, 50% $67.50@70, f.o.b. or delivered Ft. Worth.

Chicago: Demand quiet; supply fair; 50% protein $72.50@75; 55% $82.

St. Louis: Demand fair; trend higher; supply ample; 50% $77@78 ton bulk, cars; $82@84 ton in paper sacks; $81@83 ton in burlap sacks.

Louisville: Demand fair; trend steady; supply good; $80@85 ton.

New Orleans: Demand good; trend steady; supply ample; 50% meat and bone $69.60@72.50.

Wichita: Demand good; supply sufficient; 50% $72.50@75, f.o.b. plant; 55%, no quotations, no offerings.

Boston: Demand improved; supply adequate; $1.10 a protein unit; converted 50% $67.50.

MILLET

St. Louis: Demand fair; trend firm; supply scarce; recleaned Early Fortune $4.40 cwt., sacked; recleaned White Proso $4.50 cwt., sacked.

MILLFEED

Minneapolis: Easier markets in the East and Southwest were reflected in local prices, also. Directions are off and some nearby pressure was evident. Quotations: bran $44@45, standard midds. $43.50@44.50, flour midds. $46@47, red dog $47@48.

Kansas City: Demand fair; trend weaker; supply ample; quotations Jan. 23: bran $43 43.25, shorts $43@43.25, sacked; bran $39, shorts $40@40.50, middlings $39.25@39.50, bulk.

Omaha: Demand fair; supply good; bran and shorts $42.25; standard midds., bulk $41.50.

Ft. Worth: Demand fair; trend firm; offerings light; carlots, burlaps, prompt, bran $50@51; gray shorts $50.50@51.50, delivered Texas common points; $1 higher on bran and $1.50 higher on shorts, compared with previous week.

Denver: Demand good; trend slightly stronger; supply ample; bran $46.25, shorts $46.25, mill run $46.25.

Wichita: Demand fair; supply about offsets demand; basis Kansas City, Jan. 23; bran $43@43.50, shorts $43.25@43.75; bran advanced 75¢ ton and shorts $1 ton, compared with the previous week.

Chicago: Bran and standard midds. dropped off slightly during the week ending Jan. 23, although flour midds. and red dog held level. Trading was dull. A weaker tone prevailed at the close. Quotations: bran $48@48.50, standard midds. $48, flour midds. $49@50, red dog $50@52.

St. Louis: Demand slow; trend lower; supplies adequate; bran $47.50@48, shorts $47.75@48.25, St. Louis switching limits.

Cincinnati: Demand fair; trend higher; supply adequate; bran $54.50@55, middlings $52.50@55.50.

Louisville: Demand fair to good; trend strong; supply ample; bran $53.75; mixed feed $54.25; shorts $53.75; middlings $56.

Buffalo: Sales turned quiet and prices eased. Bran ended unchanged to $1.50 lower; middlings were off 50¢ to $1.50 and heavy feeds were unchanged. Quotations Jan. 23: bran $51@53, standard midds. $50.50@52.50, flour midds. $53.50@55.50, red dog $53.50@55.50.

New York: Demand good; trend upward; supply fair; bran $60.50@61; standard midds. $61@61.50.

Boston: Demand active; supply short; bran $60.70, middlings $61.20.

Philadelphia: Demand spotty; supply ample; bran $59.50, standard midds. $60, red dog $61.

New Orleans: Demand active; supply limited; trend steady; bran and shorts $52.25@53.75.

Memphis: Demand slow; trend steady; supply adequate; wheat bran $50.50, gray shorts $50.50, standard midds. $50.50.

Seattle: Demand strong; trend firm; supply tight; $48 ton, delivered, common transit points, carlots.

Portland: Demand good; supply ample; trend unchanged; $48.

Ogden: Supply average; to Utah and Idaho: red bran and mill run $47, middlings $52; to Denver: red bran and mill run $54, middlings $59; to California: red bran and mill run $54.50, middlings $59.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Demand fair; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $57@58; red bran, delivered CCP, sacked $60@60.50.

MINERAL FEED

Portland: Demand slow; supply ample; trend unchanged; $43.

Ogden: Supply average; $108 ton in 50-lb. blocks; $98 ton, granular, 50-lb. bags.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Denver: Demand fair; trend unchanged; supply ample; 7.5% phenothiazine, 45-lb. block $4.50; 8.2% phosphorus, 50-lb. block $3.50; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $5.25; 5% phosphorus, 50-lb. block $2.65.

Seattle: Demand fair; trend steady; supply good; competitive brands $45 ton, ex-warehouse; high phosphorus mixtures $65 ton, ex-warehouse.

Ft. Worth: Demand fair; supply ample; all-purpose granules $88, block $93, mineral phosphorus 6%, granules $104, block $109; cattle-sheep mineral 7% phosphorus granules $97, block $102; hog mineral phosphorus 3½% granules $87; phosphorus 2% $76 (all in 50-lb. paper bags).

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

MOLASSES

Louisville: Demand fair; trend firm; supply good; 28¢ gal., tank car lots, Gulf ports.

New Orleans: Demand good; trend firm; supply sufficient; 28¢ gal. in tank cars, f.o.b. New Orleans; 600-lb. in customers' drums $14.20.

Kansas City: Demand slow; trend firm; supply adequate; 27½¢ gal., New Orleans;

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that price also offered for forward bookings.

Minneapolis: Prices are a shade easier again at 27½@29¢ gal., f.o.b. New Orleans.

New York: Demand good; trend steady; supply fair; blackstrap 29¢ gal., tank cars, tank wagons, f.o.b. New York.

Denver: Demand slow; trend steady; supply ample; 28¢ gal., f.o.b. New Orleans.

Seattle: Demand and supply good; trend firm; $55 ton, f.o.b. Seattle, tank car lots.

Buffalo: Demand good; trend steady; supply fair; 29¼¢ gal., f.o.b. Albany.

Atlanta: Citrus molasses—demand good; supply limited; trend steady; $26 ton, bulk, f.o.b. Florida producing points.

Memphis: Demand slow; supply adequate; trend unchanged; blackstrap 27½¢ gal., tank car, f.o.b. New Orleans.

Boston: Demand steady; supply fair; 29¼¢ gal. in tank cars.

Portland: Demand slow; supply ample; trend unchanged; $16.15 drum.

Ft. Worth: Demand good; supply very scarce; blackstrap 29¢ gal., f.o.b. Houston; delivered Ft. Worth trucks $57.29; seller's market price on date of shipment.

Los Angeles: Demand and trend steady; supply ample; $35, f.o.b. tank cars; $35.25, f.o.b. tank trucks, both Los Angeles harbor.

Cincinnati: Demand fair; trend steady; supply adequate; 27½@28¢ gal., New Orleans.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Portland: Demand slow; supply ample; trend unchanged; rolled $66, ground $63, cleaned $67.

Philadelphia: Demand dull; supplies fair to light; pulverized white oats $56.50; Canadian oat feed $29.50, domestic $26.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $25.50; pulverized white oats $53@54; rolled oats $96.50.

Minneapolis: Market unchanged, with directions fair and new sales limited. Quotations: feeding rolled oats $89, standard pulverized $50@51.50, feeding oatmeal $74.50@78, crimped oats $64.50, reground oat feed $20.50@23.

Seattle: Demand and supply good; trend firm; whole oats $67 ton, ground oats $67 ton, rolled oats $69 ton, all ex-warehouse, sacked, l.c.l.

Memphis: Demand slow; supply adequate; trend unchanged; 2¼% protein, reground oat feed $27.

Ft. Worth: Demand slow; supply scarce for immediate delivery; oat millfeed $50.05; reground oat millfeed 8% protein $27.50; 3% protein $31.50.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $72.

New Orleans: Demand fair; trend easier; supply adequate; steamed rolled oats $95@96; crimped oats $72@74; pulverized white oats $58@60, used sacks; reground oat feed $28@30, 8% protein.

St. Louis: Demand slow; trend lower; supply ample; reground oat feed $21.50 in 100-lb. burlap sacks; pulverized white oats $49 ton, choice $51.

Louisville: Demand fair; trend steady; supply normal; reground $27, rolled $95, feeding $85, pulverized $54, crimped $76.70.

Chicago: Demand fair; supply adequate; reground oat feed $19.50@20; fine ground feeding oatmeal $77@79; feeding rolled oats $85@90.

Boston: Demand aggressive; supply spotty; white pulverized $56.75@58.75; ground mixed $47.12; reground oat feed $23, nominal.

OYSTER SHELL

Boston: Demand good; supply plentiful; $13, f.o.b. Florida.

Louisville: Demand good; trend firm; supply ample; in 80-lb. bags $21.84 ton, 50-lb. bags $22.04 ton, 25-lb. bags $22.24 ton.

Seattle: Demand and trend steady; supply good; western shell $28 ton, eastern shell $32 ton, both ex-warehouse, l.c.l.

New Orleans: Demand fair; trend steady; supply adequate; $18@21.75, local origin.

Los Angeles: Demand and trend steady; supply ample; local $18.25, eastern $25.

Portland: Demand slow; supply ample; trend unchanged; western $28, eastern $37.50, granite grits $27.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 24% $47.

Atlanta: Demand fair; trend steady; supply limited; 45% $54, sacked, immediate.

PEAT MOSS

Boston: Demand and supply steady; $2@2.10 bale.

Chicago: Demand good; supply moderate; $2.80@3.90 standard 7½ cu. ft. bale.

Portland: Demand good; supply ample; trend unchanged; $3.25.

New York: Demand and supply good; trend steady; Canadian, 7 cu. ft. bale, veneer wrapped $3.25, freight prepaid; German, 7½ cu. ft. bale $2.97, at dock, New York.

Seattle: Demand and trend steady; supply good; $2.90 bale, delivered, carlots, horticultural and poultry.

Los Angeles: Demand and trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.65 in 360-bale lots, delivered California main line points.

Philadelphia: Demand and supply fair; $2.95, f.o.b. pier.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; trend firm; supply adequate; 100% pure potassium, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; 90% potassium iodide calcium stearate mixture, 225-lb. lots in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 100-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4¼¢ gram in 2.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

New Orleans: Demand good; trend steady; supply tight; bran $42@44, Louisiana mills.

Ft. Worth: Demand moderate; supply scarce; carlots, rice bran $41@42, prompt shipment, f.o.b. south Texas rice mills; hulls $4@5, f.o.b. mills.

Memphis: Demand good; trend steady; supply tight; bran $42, sacked, f.o.b. Arkansas points.

Atlanta: Demand slow; trend strong; supply limited; bran $55, sacked, immediate.

Los Angeles: Demand good; trend steady; supply light; bran $59.61.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $29.50; barley $26.50@30.50.

Minneapolis: Market unchanged, with trade quiet. Quotations: country run $23@26, lights $13@22, mediums $22@31, heavies $31@40; Canadian $17.50, bulk, Duluth; Canadian ground $28.50, sacked, Duluth; flax screenings $24.

Buffalo: Demand and supply fair; trend steady; ground, sacked $34.50, New York; unground, bulk $25.50, New York.

Denver: Demand slow; trend unchanged; supply ample; $36, ground grain.

Ft. Worth: Demand good; supply limited; 12% protein, ground $43.50, sacked, delivered Ft. Worth, January.

Chicago: Demand fair; supply plentiful; ground grain screenings $30; Canadian, bulk $23.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $18.85@19.10.
Buffalo: $23.65@23.90.
Chicago: $23.10@23.35.
Cincinnati: $21.50@22.
Des Moines: $23.60@23.85.
Kansas City: $23.20@23.45.
Memphis: $20.50@20.70.
Minneapolis: $24.25@25.55.
Philadelphia: $22.65@22.90.
St. Louis: $22.50@22.75.
Tampa: $18@18.20.
Toronto: $27.50@27.80.

SORGHUMS

Ft. Worth: Demand fair; supply sufficient; mills using drouth certificates to buy milo from CCC; carlots, bulk, No. 2 yellow milo $2.48@2.50, delivered Texas common points.

Los Angeles: Demand moderate; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.93%.

Cincinnati: Demand fair; trend steady; supply adequate; $3@3.05.

SOYBEAN OIL MEAL

Wichita: Demand good; supply sufficient; 44% $65.50; 50% $73.50, f.o.b. Wichita.

Milwaukee: Demand good; supply fair; $50, bulk, Decatur.

Boston: Demand good; supply fair; $52, bulk, f.o.b. Decatur.

Louisville: Demand fair; trend strong; supply ample; $62.92.

New Orleans: Demand slow; trend steady; supply adequate; 48% $70@70.50.

Decatur: Demand spotty; supply fair; 44% bulk, unrestricted $52 for January; $50 scattered, February.

Kansas City: Demand spotty; trend steady; supply tight for nearby, more for later; $49@50, bulk, Decatur, for Kansas City and western shipment for this week; $48.50@49, next week; $52 unrestricted.

Minneapolis: The market is holding steady, with trading in fair volume. Quotations: $45.50, bulk, Decatur, for nearby and discounts of $1@1.50 for deferred.

Seattle: Demand and trend steady; supply good; $75 ton, delivered, carlots, sacked, January-March shipment.

Denver: Demand slow; trend steady; supply ample; $73.

Omaha: Demand fair; supply ample; 44% solvent $63.50, pellets $66; 41% expeller $67.50.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $58.50, sacked, f.o.b. Memphis.

Portland: Demand good; supply short; trend higher; $44@45.

Ft. Worth: Demand good; nearby shipment tight; carlots, 44% $74.50, depending on origin, February only; truck $65.50, January-February.

Chicago: Prices were higher by $1@2 ton at the close of the week ending Jan. 23, but heaviness was apparent and some traders believe lower quotations can be expected by the end of the month. Buying interest was slow and cautious. Quotations: 44% soybean oil meal for January shipment $62@62.50, February $59.50@60.

Ogden: Supply average; $85@90.

Philadelphia: Demand and supply fair; $51, bulk, Decatur.

Cincinnati: Demand fair; trend higher; supply limited; $52@54, bulk, Decatur.

Los Angeles: Demand slow; trend weak; supply ample; $78.90@79.99, delivered CCP.

Atlanta: Demand fair; trend steady; supply ample; 44% $69.75, sacked, immediate.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; black: large $15.50 cwt., medium $14 cwt., small $10.50 cwt.; gray: large $16 cwt., medium $14.50 cwt., small $11 cwt.

TANKAGE

Wichita: Demand good; supply sufficient; 60% $76@77.50, f.o.b. plant.

Louisville: Demand fair; trend firm; supply good; $85@87.50 ton.

St. Louis: Demand good; trend higher; supply adequate; 60% $85@87 ton bulk, $90@92 ton in paper sacks, $89@91 ton in burlap sacks.

New Orleans: Demand fair; trend steady; supply ample; 60% $85@88.

Chicago: Demand improved; supply fair; 60% protein $82.50.

Ft. Worth: Demand good; supply extremely light; 60% digester $83@85, f.o.b. Ft. Worth.

Kansas City: Demand slow; trend firm; supply ample; 60% digester $80@85, sacked.

St. Paul: Market steady at $78@82 for 60% digester.

Los Angeles: Demand fair; trend steady; supply ample; $1.35 a unit of protein.

Cincinnati: Demand good; trend strong; supply fair; 60% digester $86.50.

Omaha: Demand strong; supply limited; $82.50.

VITAMIN E SUPPLEMENT

New York: Demand and supply good; trend steady; 50 and 100 lb. drums $1.80 lb., 25 lb. drums $1.85 lb., f.o.b. manufacturing plants.

WHEAT GERM MEAL

New Orleans: Demand fair; trend easier; supply adequate; $65@66, cottons.

Buffalo: Demand and supply fair; trend steady; commercial grade $62, sacked, f.o.b. Buffalo.

Chicago: Market steady at $62.

FEED OPERATION SOLD

MENOMONEE FALLS, WIS. — Sussex Mills has purchased the Semon Company's feed operations here.

Richard O. Westley

Glidden Co. Promotes Richard O. Westley

CLEVELAND — The appointment of Richard O. Westley as general manager of the Glidden Company's Chemurgy division was announced by Dwight P. Joyce, chairman and president.

Mr. Westley will direct all soybean processing and grain merchandising operations of the division, succeeding Willard C. Lighter who was recently elected executive vice president of the company.

Mr. Westley joined Glidden in 1955 as grain department manager of the Chemurgy division, and a year later became manager of commodity operations. Prior to that he was associated with Cargill, Inc., as manager of that company's central region grain operations. His office will be at Chicago.

NAMED TO CIVIC POST

ST. JOSEPH, MO.—Larry Ehlert, president, St. Joseph Feed & Supply Co., Inc., has been named vice president in charge of the agricultural division of the St. Joseph (Mo.) Chamber of Commerce.

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INDIANA

(Continued from page 4)

to provide better service to customers. They will want to sell to create new wealth in the area, better yields, lower cost production. It will increase elevator sales such as seed, feed and stock items that farmers will buy when they come in to buy fertilizer.

Elevators are logical dealers because managers see farmers regularly and know their requirements. Truck and warehouse space is available to handle fertilizer materials. Farmers like to do business with good businessmen because farmers are businessmen themselves.

J. R. Kiefer, Ellwood, Ind., another panel member, pointed out that since the average dealer's trade area is considered to be a 5-mile radius, the predicted expansion in fertilizer use means that someone will sell nearly 7,000 tons of fertilizer in each agricultural community. The dealer of the future will equip himself with as thorough a knowledge of fertilizer as he now uses in the sale of feeds. He will attend meetings and conferences that will increase his knowledge of the product and by mastering the fundamentals of soil management he will open a new dimension of service and understanding of his agricultural community.

Other panel members were E. K. McNew, sales supervisor, Indianapolis, and E. M. Hopper, product sales supervisor, Nitrogen Solutions direct applications, Indianapolis. They said supplies of fertilizers would be ample for the predicted expansion in demand. Mixed goods, now the backbone of the fertilizer industry, are expected to show a big increase. Liquid solutions are coming along fast because of the ease of application. There will be an increase in the number of liquid fertilizer plants in Indiana, so that each plant will concentrate in serving a local area.

Fred K. Sale, executive secretary of the association, reported membership flirting around the 1,000 mark, with 84 new members admitted during the past year, against 54 lost. Income over expenses was $4,533 for the past year, he reported. The summer meeting of the group will return to French Lick Springs June 9-11.

Mr. Scott, in his message as retiring president, described the many diversifications the feed and grain dealer can get into to broaden his service and add to his income. He predicted a good year ahead for the dealers who look about them for opportunities. "You cannot make money talking poor business," he said. "Forget about comparing everything with the prewar period and look upon the present as a time of golden opportunity."

Following a brief discussion of the proposed change in grain and feed trading from bushels to hundredweights, it was resolved that the association secretary poll the membership by mail.

The association adopted a resolution opposing all of the proposed changes in the wheat grades as they apply to soft red winter wheat. The secretary was instructed to file a copy of the resolution with the proper authorities in Washington.

Caution on Costs

A. E. Oliver, executive vice president, Grain & Feed Dealers National Assn., Washington, D.C., discussed problems confronting the grain industry in the nation's capital in 1957. Inflation is the big threat, he said, with prices expected to rise further and heavy government spending contributing to another boom year. He cautioned dealers to watch costs closely and not over-extend themselves.

Burton D. Loken, Chicago Board of Trade, discussed the functions and uses of the commodity futures markets following a showing of the film "After the Harvest." He described the various types of traders taking part in the futures markets, such as processors, merchandisers and speculators and explained hedging as a means of providing price stability from the farmer through handling and processing. Banks, he pointed out, will loan 85 to 90% of the market value on hedged grain, as compared with only 50% on unhedged inventories.

New Look in Feed Trade

There is a new look in the feed business, according to W. T. Diamond, secretary-treasurer, American Feed Manufacturers Assn., Chicago. Changes are coming rapidly and the industry is hearing more and more about such things as vertical integration, bulk deliveries, direct selling, decentralization of plants, emphasis on concentrate feeds and feed manufacturers becoming engaged in poultry and livestock production. These subjects will be discussed at the upcoming convention of the AFMA in Chicago May 1-3, he said.

Tonnage Due To Be Up

Final figures on 1956 production of formula feeds are not available, but Mr. Diamond estimated the year's tonnage at 36 million tons, against 33.6 million tons in 1955. He said this figure would constitute 29.2% of the total feed use of 122.6 million tons, which is an increase of nearly 6% in the past six years.

Of the 36 million tons of formula feed, 21.6 million tons was poultry feed, 7 million dairy, 2.9 million beef-sheep, 3.6 million swine and 1.5 million miscellaneous.

A revolution in feed nutrition in the past 12 years has resulted in substantial savings in the amount of feed required to produce broilers and hogs, Mr. Diamond pointed out. In 1945, it required 14 lb. feed to produce a broiler for market. In 1955 only 8.5 lb. were required per bird and the 1957 ratio is expected to drop further to 8.3 lb. This means that the increased efficiency of the feed is equal to 3,990,000 tons of feed. In the case of hogs, 5,368,000 tons of feed have been spared through a reduction from 500 lb. to 448 lb. per 100-lb. of pork.

Mr. Diamond said he was not alarmed about not being able to take care of the food needs of the nation's growing human population, as the growing efficiency of the formula feed industry will permit higher output of feed lot products from less feed.

The closing feature of the convention was the appearance of Mrs. Alice B. Morgan, Bristol, R.I., financial wizard of TV fame.

Letters to the Editor

New York, N.Y.
Jan. 18, 1957

To the Editor:

A little while ago, you gave some news in your paper on molasses. As you have informed your readers, the market price of this commodity has more than doubled since the 1956 crop was sold early last year.

Cuba, the largest producer of molasses, is expected to produce in 1957 close to 250 million gallons, or approximately 1½ million short tons of molasses. I have been informed that the United Molasses Co. of London will attempt to buy a very large portion of the Cuban production, as it has very recently bought the productions of Santo Domingo and the British West Indies.

In previous years, most of the above-mentioned molasses, except that produced in the British West Indies, was sold to the U.S. Our country uses for feeding purposes close to 400 million gallons, or approximately 2,350,000 short tons of this commodity annually.

I have been informed that the assistant chairman of the board of the United Molasses Co., who is now in Havana, has given indications to members of the Molasses Sales Committee, the Cuban single seller of molasses, that he is in Cuba for the purpose of buying a large part of the molasses which the said committee will be selling next week, and that he intends to do so, cost what it may. The entire crop of Cuban molasses is sold by a single seller appointed by the President of Cuba.

The U.S. has been taking the Cuban molasses for many, many years. I, personally, have been buying it for over 45 years.

I am writing this letter in the hope of winning support for my efforts to persuade the Cuban single seller not to sell all of the 250 million gallons to the British; to keep not less than 150 million gallons for sale in the U.S.

The price of molasses, until the British began to buy, was somewhere around 15 or 16¢ gal., or $25.50@27.20 per short ton, in tank cars or tank trucks, f.o.b. the ports of New Orleans, Mobile, Houston, and also the principal Atlantic Coast ports.

Another condition which is adding to the cost of molasses this year is the scarcity of tank ships and the high freights which are being demanded and paid on molasses shipments.

If, in order to get a large part of the Cuban molasses, the British offer 20¢ or more for it, it will make the molasses cost the American consumer about 28¢ gal. or about $47.60 per short ton, f.o.b. tank car or tank truck, New Orleans, Mobile or Houston.

The many years I have devoted to the molasses business in this country convince me that the 28¢-per-gallon price is beyond the reach of most of the American consumers. Such a price would be a calamity because most of the livestock men in this country have learned to winter their livestock on roughage mixed with molasses. I am sure that a great many of the livestock men will not be able to pay the high price that molasses will cost next year if nothing is done to stop the sale of the Cuban molasses to the British, who mean to be the highest bidders for same. . . .

It will be during next week that Cuba expects to sell this year's molasses crop. If you could print a protest against the sale of such a large part of the molasses produced in the Americas to the British, Cuba may realize the mistake it will make if it sells more than the usual portion of its crop to England, even though England is able to pay for same this year more than the American farmers.

The question that everybody asks and which I am unable to answer is why England has suddenly gone into the world market to buy all, or nearly all, the molasses produced. The most likely explanation is that England will use the molasses to produce alcohol for fuel purposes. About a gallon of alcohol can be made from about 2¼ gal. of molasses.

A. J. KAPLAN, President
Southwestern Sugar & Molasses Co., Inc.
New York, N.Y.

Nebraska Grain, Feed Dealers to Gather

OMAHA—The Nebraska Grain & Feed Dealers Assn. will hold its annual meeting at the Paxton Hotel, Omaha, on March 31 and April 1-2, according to Howard W. Elm, executive secretary.

GRAND OPENING

MOSINEE, WIS.—A grand opening of the Marquard Feed & Farm Supply, formerly the Mosinee (Wis.) Milling Co., was held here recently. Herman Marquard is the firm's new owner.

W. A. Stohrer

Allied Mills Shifts Production Personnel

CHICAGO—W. A. Stohrer, formerly plant manager at Omaha, for Peoria, Ill., for Allied Mills, Inc., has been promoted to assistant general production manager with headquarters in the executive offices in Chicago.

Mr. Stohrer, a graduate of the University of Illinois, joined Allied's accounting department at Peoria, in 1933. Later he spent some time at the Memphis plant, then served as plant manager at Omaha from 1948 to 1952, before returning to Peoria as plant manager. In his new assignment he is assisting L. T. Murphy, vice president, in the supervision of plant properties and production.

Succeeding Mr. Stohrer as plant manager at Peoria is Harris T. Lyon, who previously was located in the Chicago office where he served in the purchasing and soybean departments. Mr. Lyon has been with the company for 14 years. He is past president of the Chicago Feed Club.

Nutrition Studies To Be Reported At Southern Meeting

BIRMINGHAM, ALA. — Program plans have been announced for the poultry section program at the annual meeting of the Association of Southern Agricultural Workers. The meeting will be held Feb. 4-6 at the Dinkler-Tutwiler Hotel in Birmingham.

Researchers from southern agricultural colleges, plus some from industry, will make reports on new poultry research findings. A large part of the program will deal with studies of various aspects of poultry feeding.

More than 30 papers will be presented during the poultry section sessions.

Among the many subjects to be reported on will be grit for laying hens, energy level in laying rations, calorie-protein relationships, pullet feeding methods, fat and vegetable oil products in broiler rations, separate rearing of males and females, unidentified growth factor requirements, molybdenum for the chick and poult, coccidiosis treatment, antibiotic feeding, arsenicals, hormones, coccidiostats and other drugs.

James E. Hill, Mississippi State College, is 1956-57 president of the group.

QUAKER WINS PRIZE

PASADENA, CAL. — Judged the "most beautiful" float from outside California at the 68th annual Tournament of Roses parade here was the Quaker Oats Co.'s entry entitled, "First American." The float carried a huge replica of an Indian chief's head in full headdress and figures of two young braves paddling a canoe.

BOSTON SHOW COMMITTEE—Members of the publicity committee for the Boston Poultry Show are pictured at one of their conferences preceding the Jan. 24-26 event in the Mechanics Building, Boston, in the above picture. Left to right the members are: John F. McMaster, Massachusetts Farm Bureau Federation, Waltham, Mass., committee chairman; Dr. Alfred Van Wagenen, Northeastern Poultry Producers Council's managing director, Trenton, N.J., Boston show manager; Russell Sturtevant, Halifax, Mass., vice president, Boston Poultry Exposition, Inc., and representing breeders on the show's industry advisory committee; Harold N. Caldwell, Littleton, Mass., exposition president and a market egg producers' representative on the show's industry advisory committee; John W. Hough, extension poultryman, University of Massachusetts, the show's broiler rodeo chairman; Eleanor W. Bateman, New England branch, Poultry & Egg National Board manager, Boston; and Edgar W. Spear, Plymouth County associate county agricultural agent, Brockton, Mass., chairman of the show's egg-to-chick feature. Others not in photo are: John L. Reed, West Lebanon, N.H., chairman of Northeast Poultry Industry Associates "Informer," a membership bulletin; Malcolm McCormack, radio station WBZ, Boston, and Thomas Mahoney, Cackle & Crow editor, Ipswich, Mass. (Photo by John Reed.)

CATTLE ON FEED

(Continued from page 6)

Data for the 13 states reveal that the number on feed over three months was 10% above last year, and the number on feed less than three months was up 3%. As a percent of total cattle on feed Jan. 1, the number on feed less than three months was 72%, compared with 73% a year earlier. The number on feed 3-6 months was 24% of the total, compared with 23% last year. Those on feed more than six months were 4% of the total both years.

Cattle weighing less than 600 lb. constituted 30% of the total number on feed, compared with 29% a year earlier; those weighing 600-900 lb. made up 44% of the total both years; those over 900-lb. made up 26% of the total, compared with 27% last year.

Steers on feed Jan. 1 represented 55% of the total, compared with 57% a year ago. Heifers made up 21% of the total each year. Calves accounted for 23% this year and 21% last year. Cows and other cattle comprised 1% of the total each year.

Cattle feeders in the 13 states planned to market 45% of the Jan. 1 inventory by April 1. This compares with 50% reported a year earlier.

Price Prospects

Meanwhile, in another recent report on the livestock situation, USDA noted that fed cattle prices have declined from their high last fall. Increased supplies of short-fed cattle coincided with a record large slaughter of other cattle.

USDA said that more of the increased number of cattle being fed this winter are young stock, making it likely that marketings will be distributed more evenly throughout the year than in 1956. Nevertheless, market supplies of fed cattle will be just about as large this winter as last. USDA looks for prices to level out and remain relatively stable through the first half of the year; they are not likely to go as low as at midwinter last year. It is possible that they will advance temporarily around mid-winter, then drop again when supplies are seasonally largest.

Price spreads between grades will probably be wider this winter and spring than last. A year ago, the market was depressed by unusually large numbers of highly finished heavy steers.

Iowa Economists' Views

In another report, Iowa State College economists said they look for cattle prices to stay above their lowest points of 1956, but to average lower during the last half of 1957 than they did a year earlier.

The economists expect prices of fed cattle to decline seasonally this winter, but prices probably won't get quite as low as a year earlier. A price rise next summer equal to that of this past summer isn't likely; considerably more cattle are headed for the summer and fall market.

Many of these cattle will be in the hands of beginners. An unusually large number of feeders are in the business this winter in the Corn Belt. Typically, beginners don't finish cattle to as high a grade as the more experienced feeders. This is another reason for expecting relatively heavy marketings of cattle during the summer and early fall. A fairly large percentage of these cattle may be in the good to low-choice braket—so there could be a larger than normal spread between the prices of cattle grading low-choice and average-choice or better next summer.

The peak in the fed cattle market next fall probably will come late. The heavy movement of fed cattle is likely to come early. If weather is good in the grazing areas, there will be a tendency to hold back cattle in the ranching areas. This could result in a narrow spread between the price of feeder cattle and fat cattle next summer. This wouldn't encourage short feeding. So, late in the season (after most of the fed cattle have moved to market) could be the period for the seasonal rise in fat cattle.

POULTRY INSPECTION

(Continued from page 7)

except for such persons who voluntarily applied for coverage between the effective date of the act and July 1.

Rep. McIntire's measure in the House, while providing for compulsory inspection of poultry and poultry products, avoids the controversial pitfall of legislation introduced in the last session of Congress which placed this inspection service under the meat inspection law. USDA and the poultry industry opposed this provision since it was felt in some quarters that the sponsors were not altruistically interested in taking constructive steps to build up a solid foundation for poultry.

USDA Supervision

Rep. McIntire's bill would leave the establishment of the poultry inspection service within USDA at the discretion of the secretary of agriculture.

This legislation is probably best described as the handiwork of the forward looking merchandising-minded members of the poultry industry and no small part of this aggressive leadership in driving to attain a high peak of integrity for poultry and poultry products must be ascribed to the leadership of Dr. Cliff Carpenter, president, Institute of American Poultry Industries, among others.

The industry goal is one of establishment and maintenance of wholesomeness in this commodity as it goes to the consuming public.

The McIntire bill has refined the approach to mandatory inspection in so-called designated markets to conform to testimony given at the last session of Congress. The designated market area was to represent major urban markets, wherein locally produced poultry might move in competition with federally inspected poultry and reflect a potential price disadvantage. Rep. McIntire's measure gives USDA discretionary authority over designated markets after a state authority or an industry group requests mandatory inspection at such receiving points.

The McIntire bill does not cover ante mortem inspection of poultry. This item, by its omission, may react to bring about demand for such federal activity. Congressional sources doubt that the bill can be enacted without the ante mortem provision.

Congressional sources say that the McIntire bill will unquestionably be subject to hearings and in fact they would be preferred by congressional sponsors so that there would be no legal doubts as to its validity.

MARKETS

(Continued from page 2)

Observers say that dealers and feeders seem to have built their inventories up to a fair level and are reluctant to go any higher. As is true in many industries, the big question among various segments of the feed trade seems to involve who is going to carry the inventory. Inventory means that money is tied up, observers say, and with money and credit so tight, it is worthwhile to go to extreme lengths to avoid carrying more than enough supplies to cover immediate needs. This explains the appearance of a hand-to-mouth buying attitude which persists in the trade.

Hog feeds are moving well, manufacturers say, and cattle feeds, too, are going at a good pace. Chick starter, however, is being ordered at a slower than seasonal rate, and this is blamed partly on the low egg and poultry market.

Mills mostly reported a two-day backlog. Prices of feeds averaged around $1 ton higher for the week.

Mountain States

Colder weather has provided some boost to sales the past week, but over-all continued dry conditions and unfavorable cattle prices have depressed sales. Many fat cattle going to market have not been replaced because of the narrow margin between fat and feeder cattle. Losses on fat cattle and prospects for further losses have discouraged replacements.

Drouth feeds have taken over sales from regular formula feeds as the number of counties eligible for drouth feed grains has reached 33 in Colorado, 31 in New Mexico and 12 in Wyoming. Mills are running ahead of this time last year, but probably none are approaching maximum.

Over-all feed sales—sheep, layers, broilers—have been slowed by unfavorable prices.

A few early turkeys have been started, but only in very small numbers at this time, although the outlook for this season does look promising at this time.

Ohio Valley

A solid week of temperatures ranging from a few degrees above to well below zero in the Ohio Valley, together with considerable snow, was followed early this week by warmer weather and heavy rainstorms that combined to create a sharply increased demand for formula feeds. With more sub-zero weather predicted, area manufacturers are anticipating a busy period that will require full-scale plant operations to keep production abreast of orders.

Hog and dairy feeds were area sales leaders this week, although all other feeds also were being ordered in good tonnages, especially egg mashes and broiler feeds. There likewise was a considerable pickup in sales of chick starters and turkey feeds, indicating that valley farmers have been purchasing chicks and poults in large numbers.

For the first time in many months, area manufacturers were confronted this week with a combination of higher prices and tighter supplies of a number of important ingredients. This situation forced formula feed prices up about $1 ton, with indications this price upswing will continue, especially if continued heavy buying by feeders tends to tighten ingredient supplies further.

Pacific Northwest

A slight improvement in the broiler business and in the 90-day prospect for it was the main feature of the market in the Pacific Northwest during the week, plus a heavier demand for various types of feed due to colder weather.

Freezing weather, together with a few inches of snow in western Washington and a foot or more of snow east of the Cascades in both Oregon and Washington, gave impetus to

PROMOTED—The promotion of Andrew M. Duncombe to public relations editor for the Central Soya Co., Inc., was announced by Dr. J. L. Krider, vice president and director of public relations. He will be primarily responsible for creating or editing all written material handled by the public relations division. He will also assist in developing and conducting the company's public relations projects. Mr. Duncombe, a graduate of Ohio State University, with majors in animal husbandry and technical journalism, has been with Central Soya since 1952.

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cattle and dairy feed operations. Supplies of hay are more than normally heavy, and with the end of the winter not over 90 days away, buyers are not willing to pay any price advances.

Millfeed demand continued strong and the market remained firm, although buyers were looking for material within 30 days and were not booking further than that. Sellers of millfeed were willing to discount the market $1 or more a ton for deferred delivery. Fish meal was strong, with both weather and fishing conditions unfavorable, and the market on Canadian herring meal moved up to $2.15 a unit at Vancouver, equal to about $2.25 a unit at Seattle.

The broiler market hovered around 21@22¢ lb. at the wholesale level, a raise of about 4¢ from the low, and this gave broiler producers a slightly improved outlook, although cost of production in many cases is figured at around 20¢ lb. Volume of laying rations was average. Most feed mills reported a bit of a pickup in business, and the outlook for the coming spring appears to be fairly good, with prices remaining steady.

Southeast

Feeding operations in the Southeast held steady again this week. Buying by purchasing agents of feed manufacturers has slowed from the pace set last week due to present requirements being covered. Some resale offerings of January.

Soybean meal is on the market this week looking for homes, while last week this position was very much desired. Most buyers are reported to be amply covered on soybean meal requirements. A limited supply of peanut has appeared on the Southeastern market due to government sales of peanuts to the crushing industry, and this has tended to at least soften the demand for the higher priced soybean and cottonseed meals. Offerings of cottonseed meal are still relatively tight from the oil mills while resellers are accepting offers.

The feeding of cottonseed hulls has been stepped up recently due both to tightness of offerings as well as a shortage of supplies in other comparable roughage feeding materials. Ground cob and shucks, which have been used extensively in the Southeast this season, are becoming increasingly hard to find, due to the fact that southeastern corn supplies are beginning to fade out. Some cattle feeding operations have been reduced during recent weeks and this has tended to curtail demand for this type of feed.

There seems to be an air of pessimism regarding feed demand over the coming months in most of the trade in this area. A small number of feeders who have booked cottonseed meal and other feeds for future delivery are reported to be offering some of this material for resale. Citrus pulp continues to move well, and some small sellers who have been selling at below market prices have increased their price to the going market. Production of citrus pulp by the small producer will begin tapering off during the early part of next month.

Our Pledge for 1957

Business Objective . . . to better serve an expanding feed manufacturing industry with high quality dehydrated alfalfa products on a year-around program.

Product Development . . . to continually strive for product improvement and constantly foster industry-wide upgrading of all dehydrated alfalfa products.

Pricing Policy . . . to price our products fairly; consistent with the comparable market, and in keeping with the requirements for which we obligate ourselves to better serve the feed industry.

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